



JOHNSON COUNTY

COMMISSIONERS COURT

Christopher Boedeker
County Judge

Rick Bailey
Commissioner
Precinct 1

Kenny Howell
Commissioner
Precinct 2

Mike White
Commissioner
Precinct 3

Larry Woolley
Commissioner
Precinct 4

THE STATE OF TEXAS

COUNTY OF JOHNSON

§
§
§

ORDER 2025-63

ORDER APPROVING PLAT

WHEREAS, Chapter 232 of the Texas Local Government Code requires the owner of a tract of land located outside the limits of a municipality to have a plat of the subdivision prepared if the owner divides the tract of land into two or more parts to lay out: (1) a subdivision of the tract, including an addition; (2) lots; or (3) streets, alleys, squares, parks, or other parts of the tract intended to be dedicated to public use or for the use of purchasers or owners of lots fronting on or adjacent to the streets, alleys, squares, parks or other parts; and

WHEREAS, an application for a plat of a subdivision has been presented to the Public Works Department of Johnson County; and

WHEREAS, the application for the plat of the subdivision meets the requirements of Chapter 232 of the Texas Local Government Code and the requirements of the Subdivision Rules and Regulations of Johnson County, Texas as currently amended.

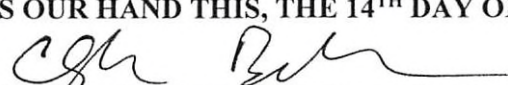
NOW THEREFORE BE IT ORDERED:

The Commissioners Court of Johnson County, Texas does hereby enter this Order approving the Plat of **Country Meadows Addition**, Lots 1-4, Block 1, in Precinct 4 for filing purposes only and clarifying that the filing of the plat which dedicates roads and streets to the public **does not** make those roads and streets county roads subject to county maintenance.

Filed For Record 9:53 AM

WITNESS OUR HAND THIS, THE 14TH DAY OF JULY 2025.

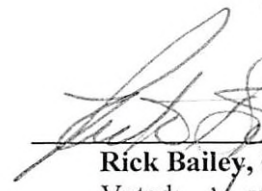
JUL 15 2025


Christopher Boedeker, Johnson County Judge

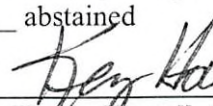
Voted: ☒ yes, ☐ no, ☐ abstained

April Long
County Clerk, Johnson County Texas

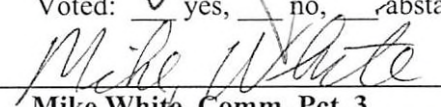
BY  DEPUTY


Rick Bailey, Comm. Pct. 1

Voted: ☒ yes, ☐ no, ☐ abstained


Kenny Howell, Comm. Pct. 2

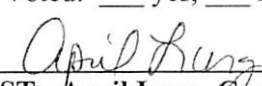
Voted: ☒ yes, ☐ no, ☐ abstained


Mike White, Comm. Pct. 3

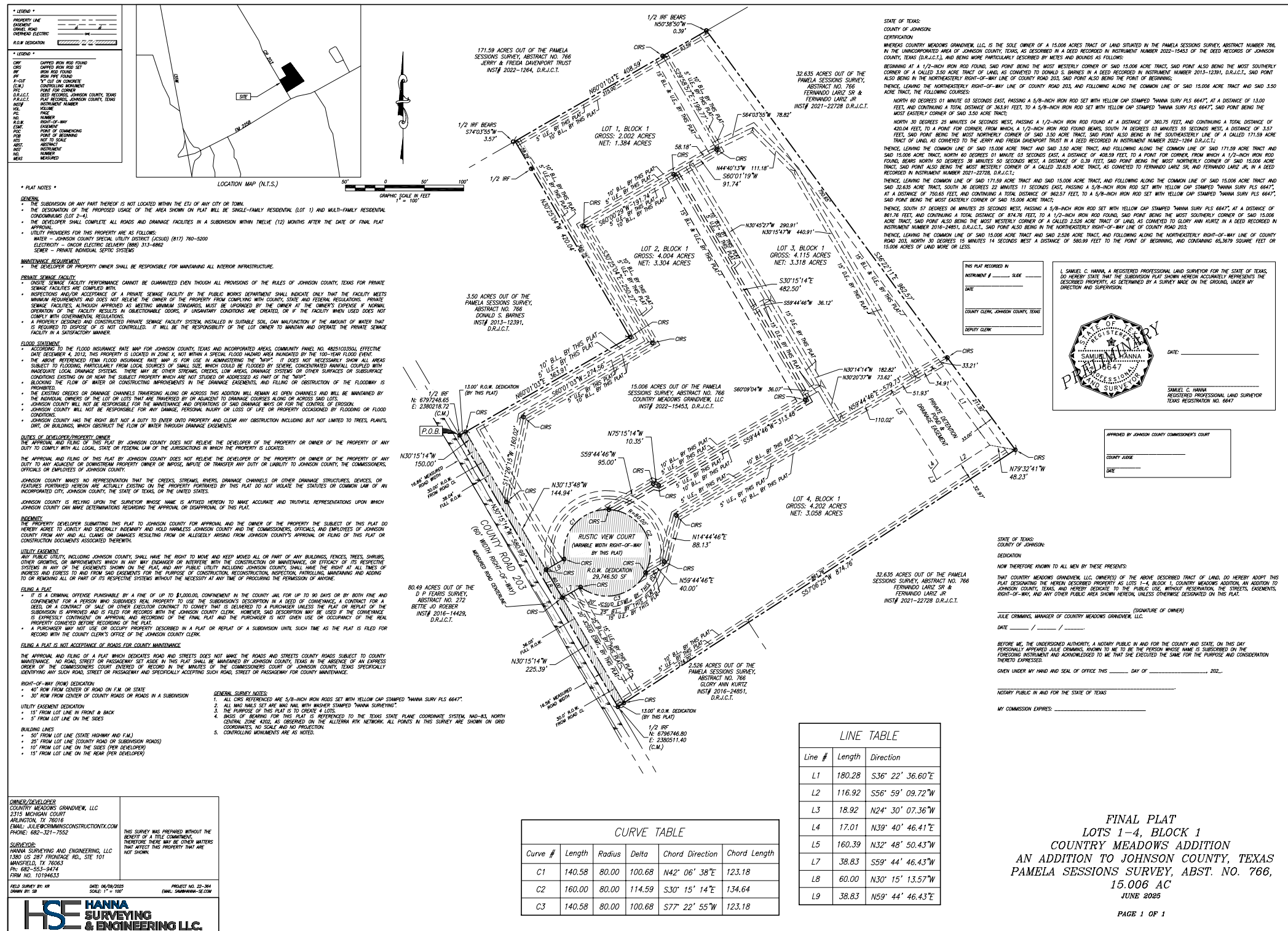
Voted: ☒ yes, ☐ no, ☐ abstained

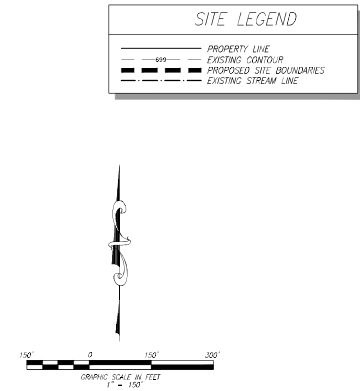
Larry Woolley, Comm. Pct. 4

Voted: ☐ yes, ☐ no, ☐ abstained


ATTEST: April Long, County Clerk







REVISIONS	
#	REVISION

DEVELOPER/OWNER
COUNTY MEADOWS CONDOMINIUMS
2115 W. MEADOWS COURT
JACKSONVILLE, TEXAS 75602
(817) 731-2874

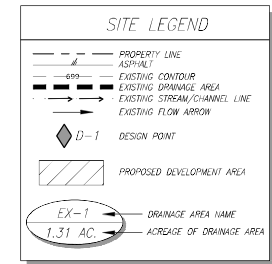
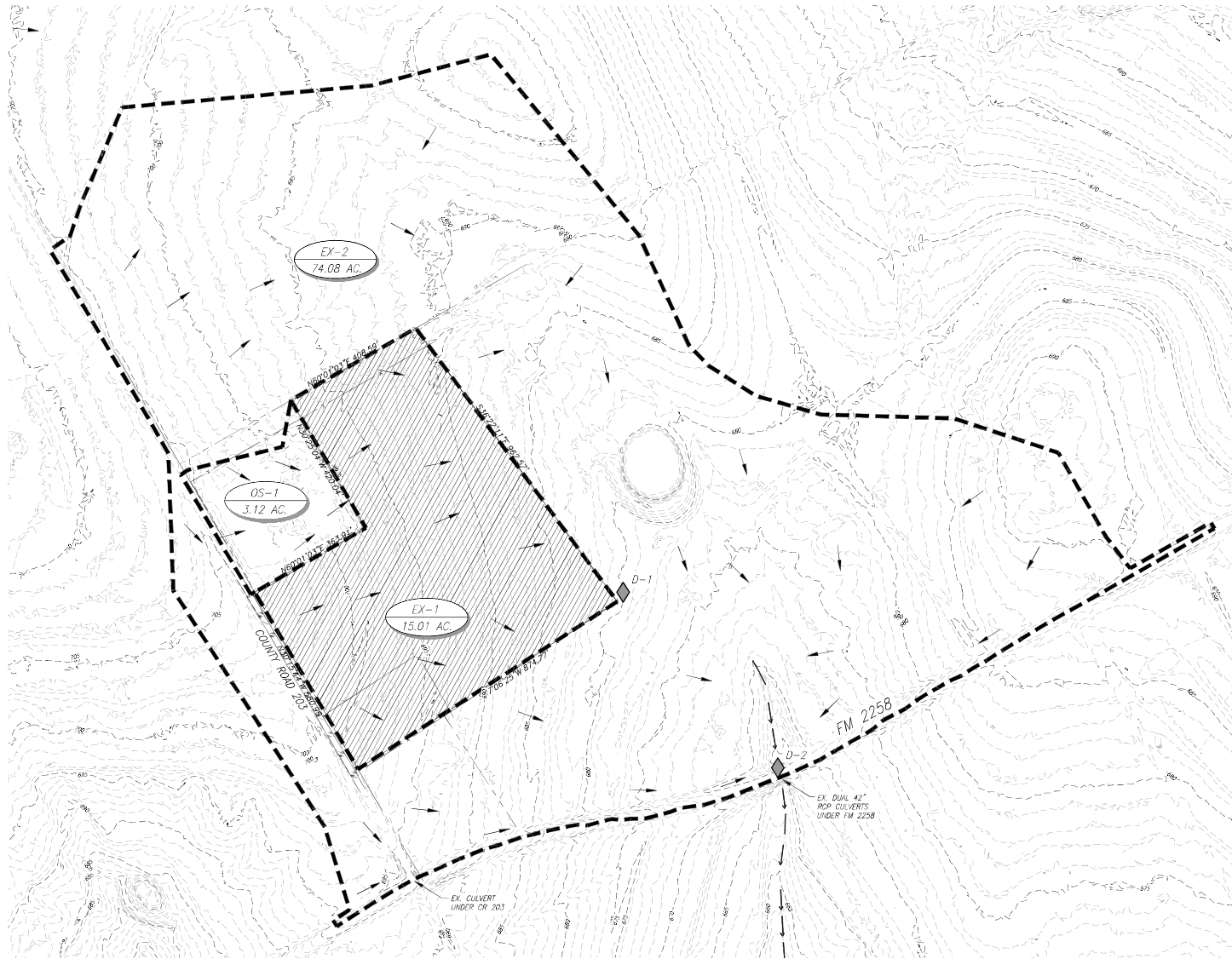
**PRE-DEVELOPMENT
CONDITIONS MAP**

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

**HSE HANNA
SURVEYING & ENGINEERING LLC.**
ENGINEERING FIRM NUMBER E-22119
SURVEYING FIRM NUMBER S-10194633
1800 US 287, PROVIDENCE RD SUITE 101
SANDSPRING, OKLAHOMA 73083
(800) 553-8474

Daniel C. Hanna
6-9-2025

ISSUE DATE	JUNE 9, 2025
PROJECT NO.	22-364
SHEET NUMBER	C-3.0
5 of 28	



*** NOTES ***

1. ALL COORDINATES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM NAD-83, NORTH CENTRAL ZONE 4302, AS DERIVED FROM GPS VECTORS OBTAINED FROM WESTERN DATA SYSTEMS' HYD NETWORK. ALL POINTS IN THIS SURVEY ARE SHOWN ON GRID COORDINATES.
2. ALL EXISTING CONTOURS FROM THIS SURVEY ARE LIDAR DATA OBTAINED FROM TNRIS.
3. NONE OF THIS PROPERTY LIES WITHIN THE FLOODPLAIN AS SHOWN ON FEMA MAP NUMBER 48251C0350L EFFECTIVE DATE DECEMBER 04, 2012.
4. RATIONAL METHOD WAS UTILIZED TO CALCULATE EXISTING FLOWS.
5. MINIMUM TC OF 15 MINUTES WAS UTILIZED FOR THESE CALCULATION AS THE MOST CONSERVATIVE APPROACH.

EXISTING CONDITION RATIONAL METHOD RUNOFF CALCULATIONS

AREA NO.	ACRES	RUNOFF COEFF.	CA	TC (min)	I1 (in/hr)	I5 (in/hr)	I10 (in/hr)	I15 (in/hr)	I20 (in/hr)	I30 (in/hr)	Q1 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)	Q100 (cfs)	NOTES
EX-1	15.01	0.30	4.502	15	3.236	4.648	5.504	6.652	7.536	8.444	14.57	20.92	24.78	29.95	33.93	38.01	Flow Offsite to Stream towards design point D-1
OS-1	3.12	0.30	0.936	15	3.236	4.648	5.504	6.652	7.536	8.444	3.03	4.35	5.15	6.23	7.06	7.91	Flow Offsite to Stream towards design point D-1
EX-2	74.08	0.30	22.224	15	3.236	4.648	5.504	6.652	7.536	8.444	71.92	103.30	122.32	147.84	167.68	187.66	Flow Offsite to Stream towards design point D-2
Totals	89.52										89.52	128.58	152.26	194.01	208.47	233.58	

REVISIONS

#	REVISION	DATE

DEVELOPER/OWNER
COUNTY MEADOWS
CONDOMINIUMS
JANUARY 2023
JANUARY 2023
(817) 731-2874

PRE-DEVELOPMENT
DAM

COUNTRY MEADOWS
CONDOMINIUMS
6905 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

**HANNA
SURVEYING
& ENGINEERING LLC.**
ENGINEERING FIRM NUMBER 10194633
SURVEYING FIRM NUMBER 101
SAMPLING-SEC-004

HSE
HANNA SURVEYING AND ENGINEERING, LLC
1300 US 287 PROVIDENCE RD SUITE 101
DALLAS, TEXAS 75243
(980) 553-8474



6-9-2025

ISSUE DATE

JUNE 9, 2025

PROJECT NO.

22-364

SHEET NUMBER

C-3.1

6 of 28





SITE LEGEND

PROPERTY LINE

ASPHALT

EXISTING CONTOUR

EXISTING DRAINAGE AREA

EXISTING STREAM/CHANNEL LINE

EXISTING FLOW ARROW

D-1 DESIGN POINT

PROPOSED DEVELOPMENT AREA

A-1 DRAINAGE AREA NAME

1.31 AC. ACREAGE OF DRAINAGE AREA

- * NOTES *
1. ALL COORDINATES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, NAD-83, NORTH CENTRAL ZONE 4202, AS DERIVED FROM GPS VECTORS OBTAINED FROM WESTERN DATA SYSTEMS RTH NETWORK. ALL POINTS IN THIS SURVEY ARE SHOWN ON GRID COORDINATES.

2. ALL EXISTING CONTOURS FROM THIS SURVEY ARE LIDAR DATA OBTAINED FROM THIS.

3. NONE OF THIS PROPERTY LIES WITHIN THE FLOODPLAIN AS SHOWN ON FEMA MAP NUMBER 48251C0350L, EFFECTIVE DATE DECEMBER 04, 2012.

4. RATIONAL METHOD WAS UTILIZED TO CALCULATE EXISTING FLOWS.

5. MINIMUM TC OF 15 MINUTES WAS UTILIZED FOR THESE CALCULATION AS THE MOST CONSERVATIVE APPROACH.



C WEIGHTED CALCULATIONS

AREA NO.	ACRES	PAVED	ROOF	OPEN AREA	LAWN	WEIGHTED RUNOFF COEFF.
A1	4.88	12%	13%	48%	27%	0.44
A2	4.05	12%	7%	66%	15%	0.41
A3	2.70	3%	11%	38%	28%	0.49
A4	1.50	23%	19%	34%	24%	0.56
A5	1.44	24%	20%	31%	25%	0.57
A-6	0.54	14%	0%	80%	0%	0.39
OS-1	74.08	0%	0%	100%	0%	0.30
OS-2	3.12	0%	0%	100%	0%	0.30

- *NOTE*
1. RUNOFF COEFFICIENT USED FOR LANDSCAPING AREAS IS 0.30 AS DEFINED IN THE SUBDIVISION RULES AND REGULATIONS OF JOHNSON COUNTY FOR OPEN AREAS.

2. RUNOFF COEFFICIENT USED FOR PROPOSED GRASS LINED CHANNELS IS 0.22 AS DEFINED IN THE ISWM TECHNICAL MANUAL FOR LAWNS WITH CLAY SOIL WITH AVERAGE OF 2-7% SLOPE.

POST-DEVELOPMENT RUNOFF CALCULATIONS

AREA NO.	ACRES	RUNOFF COEFF.	CA	TC (min)	I1 (in/hr)	I5 (in/hr)	I10 (in/hr)	I15 (in/hr)	I30 (in/hr)	Q1 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)	Q100 (cfs)	NOTES
A-3	4.88	0.44	2,147	15	3,236	4,648	5,504	6,652	7,536	8,444	6.95	9.98	11.82	14.28	16.18	Flow to A-2
A-2	4.05	0.41	1,661	15	3,236	4,648	5,504	6,652	7,536	8,444	5.38	7.72	9.14	11.05	12.52	Flow towards design point D-1
A-3	2.70	0.49	1,332	15	3,236	4,648	5,504	6,652	7,536	8,444	4.31	6.19	7.33	8.86	10.04	Flow to A-2
A-4	1.50	0.56	831	15	3,236	4,648	5,504	6,652	7,536	8,444	2.69	3.86	4.57	5.53	6.26	Flow to A-2
A-5	1.44	0.57	820	15	3,236	4,648	5,504	6,652	7,536	8,444	2.65	3.81	4.51	5.46	6.18	Flow to A-2
A-6	0.54	0.39	208	15	3,236	4,648	5,504	6,652	7,536	8,444	0.67	0.97	1.15	1.38	1.57	Flow to A-3
EX-2	74.08	0.30	22,224	15	3,236	4,648	5,504	6,652	7,536	8,444	71.92	103.30	122.32	147.84	167.48	Flow Offsite to Stream towards design point D-2
OS-1	3.12	0.30	936	15	3,236	4,648	5,504	6,652	7,536	8,444	3.03	4.35	5.15	6.23	7.06	Flow to A-1
Totals										97.60	140.19	166.00	200.63	227.29	254.67	

ZONE OF INFLUENCE (ZOI) SUMMARY TABLE

ZOI	SITE CONDITIONS	Q1 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)	Q100 (cfs)
D-1	PRE-DEVELOPMENT (EXISTING CONDITIONS)	17.60	25.28	29.59	36.18	40.96	45.92
	POST-DEVELOPMENT (PROPOSED CONDITIONS)	25.68	36.89	43.68	52.79	59.81	67.01
	DELTA	8.08	11.61	13.75	16.62	18.82	21.09
D-2	PRE-DEVELOPMENT (EXISTING CONDITIONS)	89.52	128.58	152.26	184.01	208.47	233.58
	POST-DEVELOPMENT (PROPOSED CONDITIONS)	97.60	140.19	166.00	200.63	227.29	254.67
	DELTA	8.08	11.61	13.75	16.62	18.82	21.09

*SITE DETENTION WILL BE REQUIRED TO MITIGATE ANY INCREASE IN RUNOFF FROM PROJECT

REVISIONS

#	REVISION	DATE

DEVELOPER/OWNER
COUNTY OF JOHNSON
2012 JOHNSON COUNTY
JANUARY 2012
(817) 731-2874

POST-DEVELOPMENT
DAM

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDEVIEW
JOHNSON COUNTY, TEXAS

HANNA SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER 1-22119
1300 US 287 PROVIDENCE RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474

CARL E. HANNA

099415

PROFESSIONAL SEAL

6.9.2025

ISSUE DATE:
JUNE 9, 2025
PROJECT NO:
22-364
SHEET NUMBER
C-3.2
7 of 28

1-YR DETENTION VOLUME CALCULATIONS

Detention Pond - 1yr Storm									
Area (acres)	C	CA	CI	15 (in/hr)	New Inflow Rate (cfs)	Storm Duration (min)	Total Inflow Volume (C.F.)	Max. Release Rate (cfs)	Required Storage Volume (C.F.)
18.25	0.43	7.94	1.00	4.872	36.66	5	11,598	17.60	5,279
18.25	0.43	7.94	1.00	3.864	30.90	10	18,540	17.60	7,919
18.25	0.43	7.94	1.00	3.296	25.68	15	23,111	17.60	10,559
18.25	0.43	7.94	1.00	2.250	17.85	30	32,138	17.60	13,860
18.25	0.43	7.94	1.00	1.466	11.63	60	41,980	17.60	24,516
18.25	0.43	7.94	1.00	0.903	7.17	120	51,583	17.60	35,665
18.25	0.43	7.94	1.00	0.670	5.32	180	57,420	17.60	40,240
18.25	0.43	7.94	1.00	0.367	3.15	360	68,048	17.60	152,700
18.25	0.43	7.94	1.00	0.233	1.85	720	79,903	17.60	382,760
18.25	0.43	7.94	1.00	0.136	1.05	1440	93,073	17.60	752,879

5-YR DETENTION VOLUME CALCULATIONS

Detention Pond - 5yr Storm									
Area (acres)	C	CA	CI	15 (in/hr)	New Inflow Rate (cfs)	Storm Duration (min)	Total Inflow Volume (C.F.)	Max. Release Rate (cfs)	Required Storage Volume (C.F.)
18.25	0.43	7.94	1.00	6.986	55.53	5	16,659	25.28	7,563
18.25	0.43	7.94	1.00	5.804	44.40	10	26,686	25.28	11,375
18.25	0.43	7.94	1.00	4.945	38.86	15	32,225	25.28	15,167
18.25	0.43	7.94	1.00	3.284	25.59	30	46,061	25.28	25,341
18.25	0.43	7.94	1.00	2.108	16.73	60	60,234	25.28	40,544
18.25	0.43	7.94	1.00	1.316	10.46	120	75,178	25.28	94,788
18.25	0.43	7.94	1.00	0.985	7.82	180	84,456	25.28	140,287
18.25	0.43	7.94	1.00	0.590	4.68	360	101,152	25.28	279,752
18.25	0.43	7.94	1.00	0.340	2.77	720	115,468	25.28	548,773
18.25	0.43	7.94	1.00	0.203	1.61	1440	139,527	25.28	1,066,755

10-YR DETENTION VOLUME CALCULATIONS

Detention Pond - 10yr Storm									
Area (acres)	C	CA	CI	10 (in/hr)	New Inflow Rate (cfs)	Storm Duration (min)	Total Inflow Volume (C.F.)	Max. Release Rate (cfs)	Required Storage Volume (C.F.)
18.25	0.43	7.94	1.00	8.292	65.80	5	19,740	29.93	8,980
18.25	0.43	7.94	1.00	6.942	52.71	10	31,624	29.93	12,458
18.25	0.43	7.94	1.00	5.904	43.69	15	38,309	29.93	17,858
18.25	0.43	7.94	1.00	3.816	30.28	30	54,507	29.93	31,429
18.25	0.43	7.94	1.00	2.468	19.62	60	71,361	29.93	58,368
18.25	0.43	7.94	1.00	1.569	12.45	120	89,616	29.93	112,245
18.25	0.43	7.94	1.00	1.176	9.35	180	100,086	29.93	166,123
18.25	0.43	7.94	1.00	0.708	5.63	360	121,583	29.93	327,756
18.25	0.43	7.94	1.00	0.420	3.33	720	143,804	29.93	651,022
18.25	0.43	7.94	1.00	0.245	1.94	1440	168,033	29.93	1,287,595

25-YR DETENTION VOLUME CALCULATIONS

Detention Pond - 25yr Storm									
Area (acres)	C	CA	CI	125 (in/hr)	New Inflow Rate (cfs)	Storm Duration (min)	Total Inflow Volume (C.F.)	Max. Release Rate (cfs)	Required Storage Volume (C.F.)
18.25	0.43	7.94	1.00	19.032	79.63	5	23,862	36.18	10,893
18.25	0.43	7.94	1.00	16.045	63.85	10	38,309	36.18	16,279
18.25	0.43	7.94	1.00	13.652	52.79	15	47,508	36.18	21,709
18.25	0.43	7.94	1.00	8.928	35.57	30	69,619	36.18	37,894
18.25	0.43	7.94	1.00	3.023	23.89	60	86,359	36.18	75,542
18.25	0.43	7.94	1.00	1.913	15.13	120	105,239	36.18	155,857
18.25	0.43	7.94	1.00	1.445	11.47	180	123,040	36.18	203,772
18.25	0.43	7.94	1.00	0.875	6.94	360	149,893	36.18	396,118
18.25	0.43	7.94	1.00	0.518	4.11	720	177,604	36.18	796,810
18.25	0.43	7.94	1.00	0.302	2.40	1440	207,207	36.18	1,365,537

50-YR DETENTION VOLUME CALCULATIONS

Detention Pond - 50yr Storm									
Area (acres)	C	CA	CI	60 (in/hr)	New Inflow Rate (cfs)	Storm Duration (min)	Total Inflow Volume (C.F.)	Max. Release Rate (cfs)	Required Storage Volume (C.F.)
18.25	0.43	7.94	1.00	11.364	30.20	5	27,090	40.98	12,209
18.25	0.43	7.94	1.00	9.125	22.44	10	43,451	40.98	19,442
18.25	0.43	7.94	1.00	7.335	19.81	15	53,833	40.98	24,580
18.25	0.43	7.94	1.00	5.210	14.18	30	74,435	40.98	31,404
18.25	0.43	7.94	1.00	3.423	27.17	60	87,809	40.98	72,916
18.25	0.43	7.94	1.00	2.181	17.31	120	124,811	40.98	153,685
18.25	0.43	7.94	1.00	1.654	13.13	180	141,784	40.98	227,453
18.25	0.43	7.94	1.00	1.055	7.88	360	173,301	40.98	448,759
18.25	0.43	7.94	1.00	0.595	4.73	720	204,193	40.98	891,371
18.25	0.43	7.94	1.00	0.343	2.72	1440	235,227	40.98	1,541,373

100-YR DETENTION VOLUME CALCULATIONS

Detention Pond - 100yr Storm									
Area (acres)	C	CA	CI	100 (in/hr)	New Inflow Rate (cfs)	Storm Duration (min)	Total Inflow Volume (C.F.)	Max. Release Rate (cfs)	Required Storage Volume (C.F.)
18.25	0.43	7.94	1.00	12.744	109.13	5	30,338	45.92	13,779
18.25	0.43	7.94	1.00	10.230	81.18	10	48,707	45.92	20,964
18.25	0.43	7.94	1.00	8.444	67.01	15	63,306	45.92	27,552
18.25	0.43	7.94	1.00	5.834	46.30	30	83,331	45.92	48,217
18.25	0.43	7.94	1.00	3.940	30.47	60	100,699	45.92	165,445
18.25	0.43	7.94	1.00	2.464	19.55	120	140,752	45.92	272,202
18.25	0.43	7.94	1.00	1.679	14.89	180	160,809	45.92	354,859
18.25	0.43	7.94	1.00	1.145	9.58	360	196,230	45.92	502,529
18.25	0.43	7.94	1.00	0.679	5.38	720	232,510	45.92	884,771
18.25	0.43	7.94	1.00	0.395	3.13	1440	270,903	45.92	1,366,853

DETENTION VOLUME PROVIDED SUMMARY

Proposed Detention Volume			
Elev.	Depth	Volume (cy)	Volume (cfs)
680.5	0	0	0
681	0.5	11.54	311.58
682	1.5	245.22	6620.94
683	2.5	663.14	17950.78
684	3.5	1173.38	30325.86
685	4.5	1639.28	44290.56

DETENTION SUMMARY

Proposed Detention Outfall Summary				
Storm Event	Flow Into Detention Pond (cfs)	Max Detention Flow Out (cfs)	Storage Required (cf)	Water Surface Elevation
1	25.38	17.60	13,660	682.63
5	36.45	25.28	19,520	683.13
10	43.16	29.93	23,078	683.42
25	52.16	36.18	27,835	683.80
50	59.09	40.98	31,404	684.09
100	66.21	45.92	35,115	684.34

DETENTION WSEL/STORAGE TABLE

35,115	Storage (CF)	100-YR
684.34	Max WSEL 100-YR	
31,404	Storage (CF)	50-YR
684.09	Max WSEL 50-YR	
27,835	Storage (CF)	25-YR
683.80	Max WSEL 25-YR	
23,078	Storage (CF)	10-YR
683.42	Max WSEL 10-YR	
19,520	Storage (CF)	5-YR
683.13	Max WSEL 5-YR	
13,660	Storage (CF)	1-YR
682.63	Max WSEL 1-YR	

36" RCP - DETENTION OUTFALL IN NORMAL 100-YEAR CONDITION

Culvert Calculator Report

36" RCP - DETENTION POND OUTFALL IN NORMAL 100-YEAR CONDITION

Solve For: Discharge

Culvert Summary:

Alternate HW Elevations	684.34 ft	Inlet/Outlet Length/Height	1.30'
Compressed Headwater Elev.	684.34 ft	Discharge	10.09 cfs
Inlet Control HW Elev.	684.34 ft	Tailwater Elevation	3.00 ft
Outlet Control HW Elev.	684.34 ft	Control Type	Inlet Control

Grids:

Upstream Invert	682.05 ft	Downstream Invert	682.05 ft
Length	27.00 ft	Constructed Slope	1.0000% ft/ft

Hydraulic Profile:

Profile	SD	Depth, Downstream	2.10 ft
Slope Type	Step	Normal Depth	2.00 ft
Flow Regime	Subcritical	Critical Depth	2.00 ft
Velocity Downstream	9.00 ft/s	Critical Slope	1.0000% ft/ft

Notes:

Section Slope	Channel	Knowledge Coefficient	0.015
Section Material	Concrete	Span	3.00 ft
Reaction Box	30 in.	Flow	3.00 ft
Number Sections	1		

Outlet Control Properties:

Outlet Control HW Elev.	684.34 ft	Upstream Velocity Head	1.34 ft
Rate	10.09	Distance Loss	0.05 ft

Inlet Control Properties:

Inlet Control HW Elev.	684.34 ft	Flow Control	Submerged
Inlet Type	Grates and appurtenances	Area Full	1.1 ft ²
K	0.0000	HW S Scale	1
M	0.0000	HW S Scale	1
C	0.0000	Reaction Point	1
V	0.7600		

Project Engineer: sean@hanna.us.com
CulvertMaster v10.0.0 (10.03.00.00)
11/20/2022 10:00:00 AM
Page 1 of 1

36" RCP - DETENTION OUTFALL IN EMERGENCY OVERFLOW CONDITION

Culvert Calculator Report

36" RCP - DETENTION POND OUTFALL IN EMERGENCY OVERFLOW CONDITION

Solve For: Discharge

Culvert Summary:

Alternate HW Elevations	685.30 ft	Inlet/Outlet Length/Height	1.30'
Compressed Headwater Elev.	685.30 ft	Discharge	68.77 cfs
Inlet Control HW Elev.	685.30 ft	Tailwater Elevation	3.00 ft
Outlet Control HW Elev.	685.30 ft	Control Type	Inlet Control

Grids:

Upstream Invert	683.05 ft	Downstream Invert	683.05 ft
Length	27.00 ft	Constructed Slope	1.0000% ft/ft

Hydraulic Profile:

Profile	SD	Depth, Downstream	2.02 ft
Slope Type	Step	Normal Depth	2.02 ft
Flow Regime	Subcritical	Critical Depth	2.02 ft
Velocity Downstream	16.34 ft/s	Critical Slope	1.0000% ft/ft

Notes:

Section Slope	Channel	Knowledge Coefficient	0.015
Section Material	Concrete	Span	3.00 ft
Reaction Box	30 in.	Flow	3.00 ft
Number Sections	1		

Outlet Control Properties:

Outlet Control HW Elev.	685.30 ft	Upstream Velocity Head	1.71 ft
Rate	68.77	Distance Loss	0.34 ft

Inlet Control Properties:

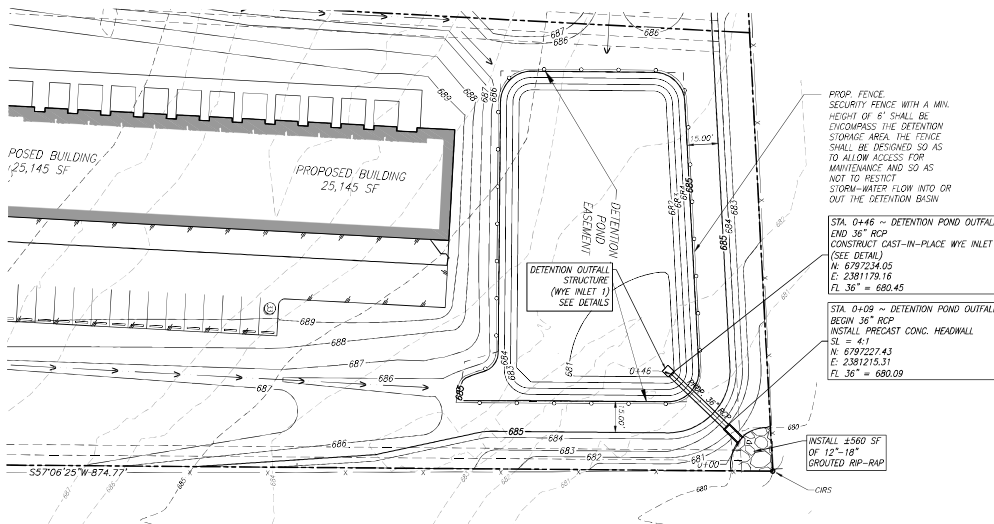
Inlet Control HW Elev.	685.30 ft	Flow Control	Submerged
Inlet Type	Grates and appurtenances	Area Full	1.1 ft ²
K	0.0000	HW S Scale	1
M	0.0000	HW S Scale	1
C	0.0000	Reaction Point	1
V	0.7600		

Project Engineer: sean@hanna.us.com
CulvertMaster v10.0.0 (10.03.00.00)
11/20/2022 10:00:00 AM
Page 1 of 1

REVISIONS

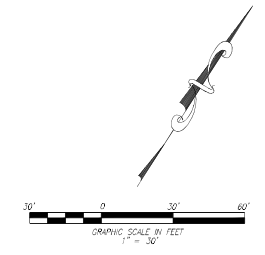
#	REVISION	DATE

DESIGNED BY: sean@hanna.us.com
CHECKED BY: sean@hanna.us.com
DATE: 11/20/2022 10:00:00 AM
PROJECT:

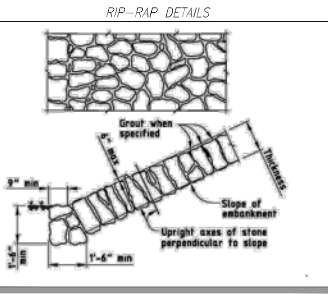


NOTE:
CONTRACTOR TO CALL TEXAS 811 PRIOR TO ANY ON-SITE EXCAVATION. CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES, BOTH THOSE SHOWN AND NOT SHOWN ON THESE PLANS, PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION AND NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF FIELD SURVEY DATA, UTILITY OWNER RECORD DRAWINGS.

FLOOD PLAIN NOTE:
ACCORDING TO THE INFORMATION SHOWN ON THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANEL NO. 48251C0350, REVISED DECEMBER 04, 2012, NONE OF THIS PROPERTY APPEARS TO BE WITHIN THE "SPECIAL FLOOD HAZARD AREA (SFHA)" - AS DEFINED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, FEDERAL INSURANCE ADMINISTRATION, OR THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

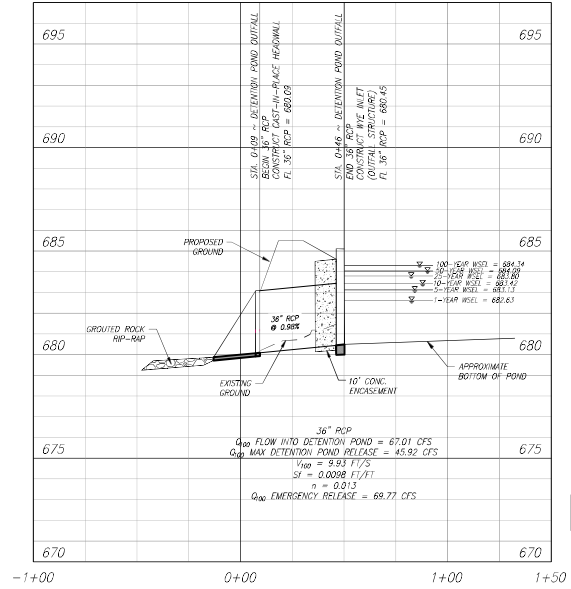


SITE LEGEND	
---	PROPERTY LINE
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	PROPOSED FENCE
---	PROP. 12"-18" GROUTED RIP-RAP
FL	FLOW LINE
STA	STATION
WSEL	WATER SURFACE ELEVATION
RCP	REINFORCED CONCRETE PIPE
ROB	REINFORCED CONCRETE BOX
DET	DETENTION
SF	SQUARE FEET



- NOTES:
- DETENTION BASINS RESULTING FROM EXCAVATION SHALL PROVIDE POSITIVE DRAINAGE WITH A MINIMUM BOTTOM SLOPE OF ONE (1) PERCENT. THE SIDE SLOPE FOR ANY EXCAVATED DETENTION BASIN, WHICH IS NOT A ROCK, SHALL NOT EXCEED 2:1. SIDE SLOPES AND BOTTOM SHALL BE PROTECTED FROM EROSION WITH GRASS OR OTHER APPROVED MATERIALS.
 - EMBANKMENT EMBANKMENTS USED FOR WATER IMPROVEMENT MUST BE DESIGNED BASED UPON GEOLOGICAL INVESTIGATION OF THE SITE. THE MINIMUM DRAIN WIDTH OF THE EMBANKMENT SHALL BE TWELVE (12) FEET. EMBANKMENTS SHALL BE PROTECTED FROM EROSION WITH GRASS OR OTHER APPROVED MATERIALS.
 - DETENTION BASINS SHALL BE DESIGNED WITH ADEQUATE INGRESS AND EGRESS TO ALLOW FOR REGULAR MAINTENANCE, INCLUDING PERIODIC DECULPATING AND CORING REMOVAL. DETENTION BASINS DESIGNED FOR PERMANENT WATER STORAGE MUST INCLUDE OVERFLOWING FACILITIES TO ALLOW FOR MAINTENANCE. DETENTION BASINS DESIGNED TO DRAIN DRAINAGE AREAS OF 300 ACRES OR MORE MUST INCLUDE A DECULPATING BASIN IN THE UPTHEAM POOL AREA.
 - SECURITY FENCING WITH A MINIMUM HEIGHT OF SIX (6) FEET SHALL ENCOMPASS THE DETENTION STORAGE AREA. THE FENCE SHALL BE DESIGNED SO AS TO ALLOW ACCESS FOR MAINTENANCE AND SO AS NOT TO RESTRICT STORM-WATER FLOW INTO OR OUT OF THE DETENTION BASIN.

DETENTION POND OUTFALL PROFILE



PROFILE SCALE:
HOR: 1" = 30'
VERT: 1" = 3'

REVISIONS	
#	REVISION

DEVELOPER/OWNER
COUNTY OF JOHNSON
JANUARY 2025
JANUARY 2025
(817) 731-2874

STORM DRAIN PLAN & PROFILE

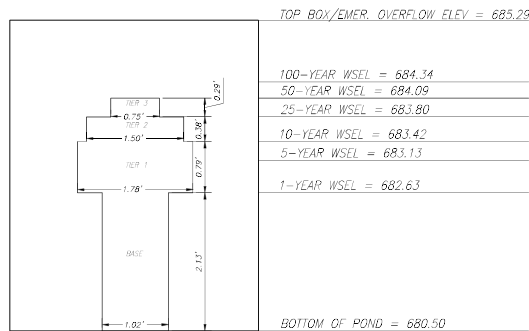
COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HANNA HSE
SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER 10194633
1300 US 287 PROVIDER RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474

6.9.2025

ISSUE DATE: JUNE 9, 2025
PROJECT NO: 22-364
SHEET NUMBER: C-3.4
9 of 28

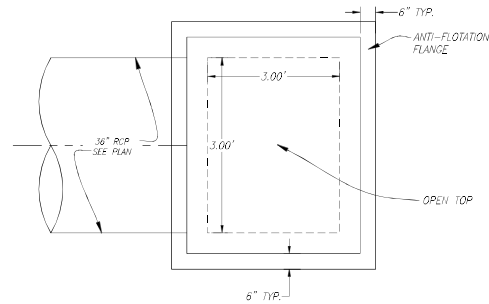
DETENTION POND ORIFICE OUTLET DETAILS
(N.T.S.)



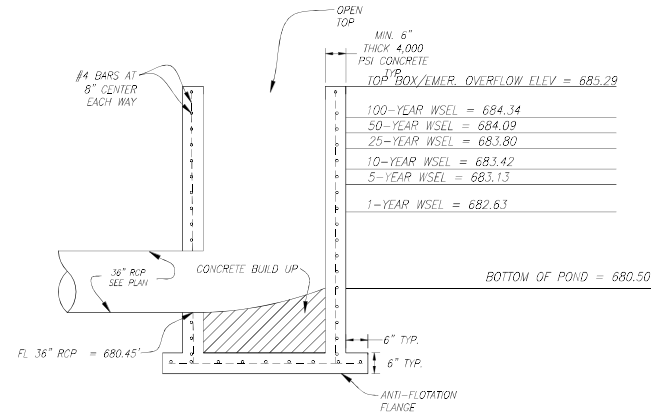
DETENTION POND OUTFALL DETAILS

N.T.S.

WYE INLET 1 PLAN DETAIL
(N.T.S.)



WYE INLET 1 SECTION DETAIL
(N.T.S.)



REVISIONS	
#	REVISION

DEVELOPER/OWNER
COUNTY OF JOHNSON
2112 W. MEADOWS COURT
AUSTIN, TEXAS 78746
(817) 712-2874

DET POND
OUTFALL
STRUCT DETAILS

COUNTRY MEADOWS
CONDOMINIUMS
6805 CP 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HSE HANNA
SURVEYING
& ENGINEERING LLC.
ENGINEERING FIRM NUMBER 1-22119
SURVEYING FIRM NUMBER 10194633
1300 US 287 PROVIDENCE RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474



6-9-2025

ISSUE DATE

JUNE 9, 2025

PROJECT NO.

22-364

SHEET NUMBER

C-3.5

10 of 28

DETENTION POND ORIFICE CALCULATION - 1-YR

Worksheet for Orifice 1-YR	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	662.62 ft
Control Elevation	661.57 ft
Tailwater Elevation	6.00 ft
Discharge Coefficient	0.980
Opening Width	1.00 ft
Opening Height	2.1 ft
Results	
Discharge	17.66 cfs
Headwater Height Above Control	1.06 ft
Tailwater Height Above Control	661.57 ft
Flow Area	2.2 ft ²
Velocity	8.10 ft/s

20-044 - 6965 CR 203 Johnson County Development - 3.00 ft Dia. Orifice Size
6/27/2024

Ben Ray Systems, Inc. - Inverted Weirhead Station
Control
42 Parker Center Drive Suite 203 W
Watertown, CT 06795 USA +1 203 759 1986

1 Worksheet
10/23/2023
Page 1 of 1

DETENTION POND ORIFICE CALCULATION - 5-YR

Worksheet for Orifice 5-YR Base	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	663.13 ft
Control Elevation	661.57 ft
Tailwater Elevation	6.00 ft
Discharge Coefficient	0.980
Opening Width	1.00 ft
Opening Height	2.1 ft
Results	
Discharge	21.35 cfs
Headwater Height Above Control	1.56 ft
Tailwater Height Above Control	661.57 ft
Flow Area	2.2 ft ²
Velocity	9.65 ft/s

Worksheet for Orifice 5-YR Tier 1	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	663.13 ft
Control Elevation	662.38 ft
Tailwater Elevation	6.00 ft
Discharge Coefficient	0.980
Opening Width	2.00 ft
Opening Height	6.5 ft
Results	
Discharge	3.93 cfs
Headwater Height Above Control	0.75 ft
Tailwater Height Above Control	662.38 ft
Flow Area	1.6 ft ²
Velocity	3.93 ft/s

20-044 - 6965 CR 203 Johnson County Development - 3.00 ft Dia. Orifice Size
6/27/2024

Ben Ray Systems, Inc. - Inverted Weirhead Station
Control
42 Parker Center Drive Suite 203 W
Watertown, CT 06795 USA +1 203 759 1986

1 Worksheet
10/23/2023
Page 1 of 1

DETENTION POND ORIFICE CALCULATION - 10-YR

Worksheet for Orifice 10-YR Base	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	663.42 ft
Control Elevation	661.57 ft
Tailwater Elevation	6.00 ft
Discharge Coefficient	0.980
Opening Width	1.00 ft
Opening Height	2.1 ft
Results	
Discharge	23.37 cfs
Headwater Height Above Control	1.85 ft
Tailwater Height Above Control	661.57 ft
Flow Area	2.2 ft ²
Velocity	10.75 ft/s

Worksheet for Orifice 10-YR Tier 1	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	663.42 ft
Control Elevation	663.03 ft
Tailwater Elevation	6.00 ft
Discharge Coefficient	0.980
Opening Width	1.78 ft
Opening Height	6.8 ft
Results	
Discharge	6.69 cfs
Headwater Height Above Control	0.39 ft
Tailwater Height Above Control	663.03 ft
Flow Area	1.3 ft ²
Velocity	4.94 ft/s

20-044 - 6965 CR 203 Johnson County Development - 3.00 ft Dia. Orifice Size
6/27/2024

Ben Ray Systems, Inc. - Inverted Weirhead Station
Control
42 Parker Center Drive Suite 203 W
Watertown, CT 06795 USA +1 203 759 1986

1 Worksheet
10/23/2023
Page 1 of 1

REVISIONS

#	REVISION	DATE

DEVELOPER/OWNER
COUNTY OF JOHNSON
2015 MONROE COURT
JACKSONVILLE, FL 32218
(904) 731-2876

DETENTION POND
OUTFALL STRUCTURES
CALCULATIONS

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF CHANDLER
JOHNSON COUNTY, TEXAS

HANNA
SURVEYING
& ENGINEERING LLC.
ENGINEERING FIRM NUMBER 1019453
SURVEYING FIRM NUMBER 1019453
SAMPLING-SEC.COM
(863) 553-8474



6-9-2025

ISSUE DATE
JUNE 9, 2025

PROJECT NO.
22-364

SHEET NUMBER
C-3.6

11 of 28

DETENTION POND ORIFICE CALCULATION – 25-YR

Worksheet for Orifice 25-YR Base	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	683.03 ft
Control Elevation	683.57 ft
Tailwater Elevation	0.00 ft
Discharge Coefficient	0.980
Opening Width	1.02 ft
Opening Height	2.1 ft
Results	
Discharge	25.03 cfs
Headwater Height Above Control	2.23 ft
Tailwater Height Above Control	-683.57 ft
Flow Area	2.1 ft ²
Velocity	11.74 ft/s

Worksheet for Orifice 25-YR Tier 1	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	683.03 ft
Control Elevation	683.03 ft
Tailwater Elevation	0.00 ft
Discharge Coefficient	0.980
Opening Width	1.30 ft
Opening Height	0.8 ft
Results	
Discharge	9.35 cfs
Headwater Height Above Control	0.77 ft
Tailwater Height Above Control	-683.03 ft
Flow Area	1.4 ft ²
Velocity	6.92 ft/s

22-364 - 6965 CR 203 Johnson County Development - Outfall Site Orifice Inlet
8/27/2024

Bentley Systems, Inc. - Hydraulics Methods Solution Center
27 Siemon Company Drive Suite 200 W
Waltham, CT 07895-0004 - 1-203-715-1800

FlowMaster
17/03/18/25
Page 1 of 1

DETENTION POND ORIFICE CALCULATION – 50-YR

Worksheet for Orifice 50-YR Base	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	684.09 ft
Control Elevation	681.57 ft
Tailwater Elevation	0.00 ft
Discharge Coefficient	0.980
Opening Width	1.02 ft
Opening Height	2.1 ft
Results	
Discharge	27.16 cfs
Headwater Height Above Control	2.52 ft
Tailwater Height Above Control	-681.57 ft
Flow Area	2.1 ft ²
Velocity	12.49 ft/s

Worksheet for Orifice 50-YR Tier 1	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	684.09 ft
Control Elevation	683.03 ft
Tailwater Elevation	0.00 ft
Discharge Coefficient	0.980
Opening Width	1.78 ft
Opening Height	0.8 ft
Results	
Discharge	11.38 cfs
Headwater Height Above Control	1.05 ft
Tailwater Height Above Control	-683.03 ft
Flow Area	1.4 ft ²
Velocity	8.09 ft/s

22-364 - 6965 CR 203 Johnson County Development - Outfall Site Orifice Inlet
8/27/2024

Bentley Systems, Inc. - Hydraulics Methods Solution Center
27 Siemon Company Drive Suite 200 W
Waltham, CT 07895-0004 - 1-203-715-1800

FlowMaster
17/03/18/25
Page 1 of 1

DETENTION POND ORIFICE CALCULATION – 100-YR

Worksheet for Orifice 100-YR Base	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	684.34 ft
Control Elevation	681.57 ft
Tailwater Elevation	0.00 ft
Discharge Coefficient	0.980
Opening Width	1.02 ft
Opening Height	2.1 ft
Results	
Discharge	28.43 cfs
Headwater Height Above Control	2.77 ft
Tailwater Height Above Control	-681.57 ft
Flow Area	2.1 ft ²
Velocity	13.08 ft/s

Worksheet for Orifice 100-YR Tier 1	
Project Description	
Solve For	Discharge
Input Data	
Headwater Elevation	684.34 ft
Control Elevation	683.03 ft
Tailwater Elevation	0.00 ft
Discharge Coefficient	0.980
Opening Width	1.78 ft
Opening Height	0.8 ft
Results	
Discharge	12.64 cfs
Headwater Height Above Control	1.31 ft
Tailwater Height Above Control	-683.03 ft
Flow Area	1.4 ft ²
Velocity	9.05 ft/s

22-364 - 6965 CR 203 Johnson County Development - Outfall Site Orifice Inlet
8/27/2024

Bentley Systems, Inc. - Hydraulics Methods Solution Center
27 Siemon Company Drive Suite 200 W
Waltham, CT 07895-0004 - 1-203-715-1800

FlowMaster
17/03/18/25
Page 1 of 1

REVISIONS

#	REVISION	DATE

DEVELOPED BY: HANNA SURVEYING & ENGINEERING, LLC
COUNTY: JOHNSON COUNTY
PROJECT: 22-364 - 6965 CR 203
JANET.C.HANNA@HANNA-SURVEYING.COM
(863) 553-8474

DETENTION POND
OUTFALL STRUCTURE
CALCULATIONS

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HANNA SURVEYING & ENGINEERING, LLC
ENGINEERING FIRM NUMBER: 1019453
SURVEYING FIRM NUMBER: 1019453
SAMPLING-SEC.COM
(863) 553-8474



6-9-2025

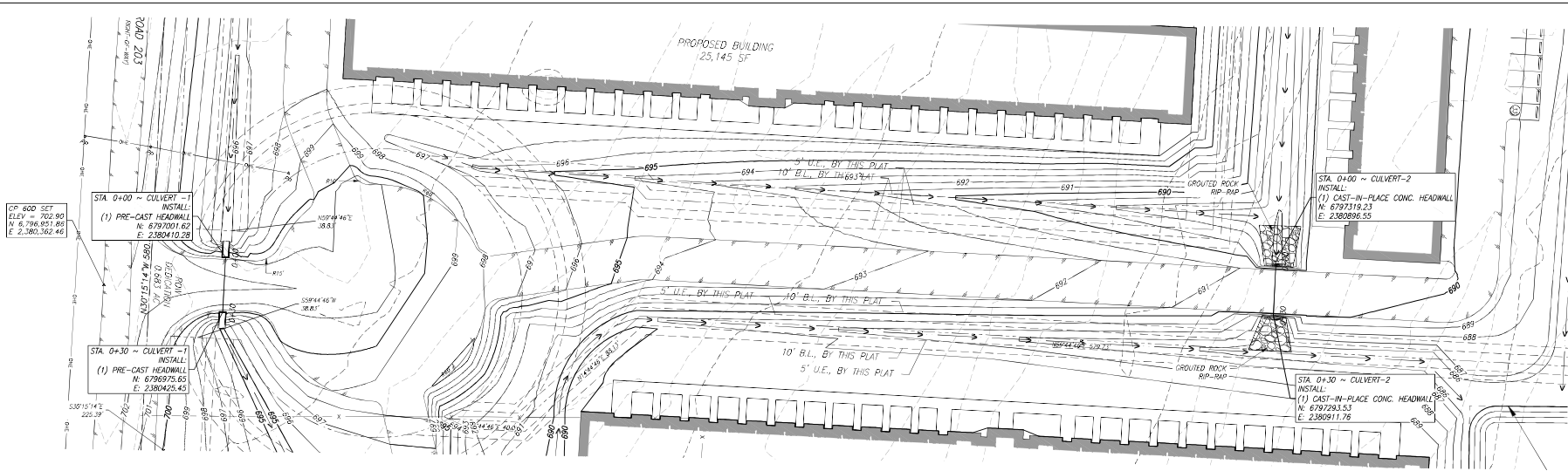
ISSUE DATE: JUNE 9, 2025

PROJECT NO.: 22-364

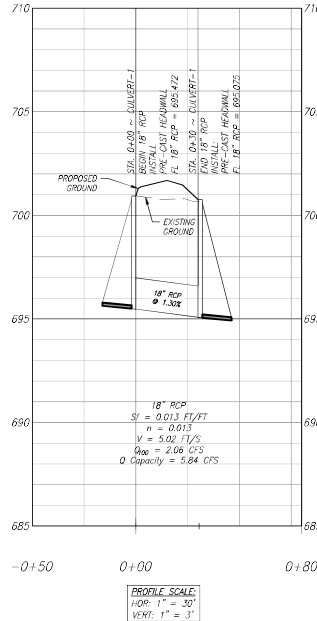
SHEET NUMBER

C-3.7

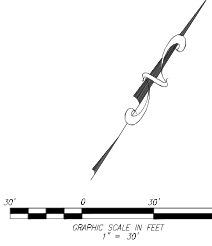
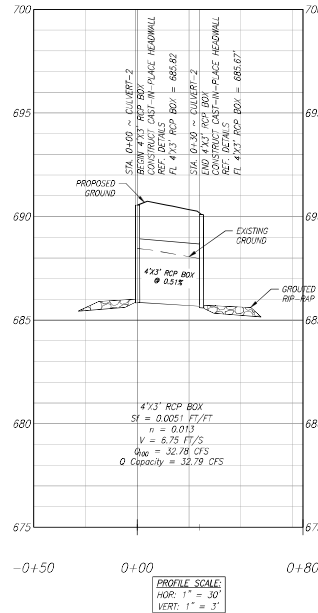
12 of 28



CULVERT -1 PROFILE



CULVERT-2 PROFILE



SITE LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROP. 12"-18" GROUDED RIP-RAP
- FLOW LINE
- STATION
- WATER SURFACE ELEVATION
- REINFORCED CONCRETE PIPE
- REINFORCED CONCRETE BOX
- DEVELOPMENT
- SOILS

FL STA WSEL RCP RCP BOX DETAIL



NOTE:
CONTRACTOR TO CALL TEXAS 811 PRIOR TO ANY ON-SITE EXCAVATION.
CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF
ALL EXISTING UTILITIES, BOTH THOSE SHOWN AND NOT SHOWN ON
THESE PLANS, PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION
AND NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. EXISTING
UTILITIES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF
FIELD SURVEY DATA, UTILITY OWNER RECORD DRAWINGS.

FLOOD PLAIN NOTE:
ACCORDING TO THE INFORMATION SHOWN ON THE NATIONAL FLOOD
INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM),
COMMUNITY PANEL NO. 48251C0300, REVISED DECEMBER 04, 2012,
NONE OF THIS PROPERTY APPEARS TO BE WITHIN THE "SPECIAL
FLOOD HAZARD AREA (SFHA)" - AS DEFINED BY THE U.S. DEPARTMENT
OF HOUSING AND URBAN DEVELOPMENT, FEDERAL INSURANCE
ADMINISTRATION, OR THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

REVISIONS	
#	REVISION

DEVELOPER/OWNER
COUNTY OF JOHNSON, TEXAS
JANET HANNA
(817) 731-2874

CULVERT PLAN & PROFILE

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HSE HANNA SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER F-22119
1380 US 289 PROVIDENCE RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474

ISSUE DATE: JUNE 9, 2025
PROJECT NO: 22-364
SHEET NUMBER: C-3.8
13 of 28

Culvert Designer/Analyzer Report CULVERT-1 CALCS.

Analysis Component			
Storm Event	Design	Discharge	2.26 cfs
Peak Discharge Method: User/Specified			
Design Discharge	2.26 cfs	Check Discharge	3.26 cfs
Tabular Conditions: Constant Velocity			
Tabular Elevation	NA, N		
Name	Description	Discharge	HW Elev
CULVERT-1	5-18 inch Culvert	2.26 cfs	699.21 F
WSP	Roadway	3.00 cfs	699.21 F
Total		3.26 cfs	699.21 F

Project Engineer: son@hanna-surveying.com
Culvert Designer v18.3 (10/08/2020)
HSE2024 18.30 10/27/24 Day Systems, Incorporated Hanna Surveying And Engineering, LLC Waterbury, CT 06708 USA +1-203-755-1686 Page 1 of 2

Culvert Designer/Analyzer Report CULVERT-1 CALCS.

Component: Culvert-1			
Culvert Summary			
Concrete Headwater Elev	699.21 F	Discharge	2.26 cfs
H&M Control HW Elev	699.21 F	Tabular Elevation	NA, N
Culvert Control HW Elev	699.21 F	Control Type	Entrance Control
Headwater Depth/Length	0.00		
Oracles			
Upstream Invert	695.67 F	Downstream Invert	695.56 F
Length	30.00 F	Computed Slope	1.03416 %/H
Hydraulic Profile			
Profile	52	Depth, Downstream	0.62 F
Slope Type	Sharp	Normal Depth	0.42 F
Flow Regime	Supercritical	Critical Depth	0.54 F
Velocity Downstream	5.00 F/s	Critical Slope	1.00452 %/H
Section			
Section Slope	Concrete	Manning Coefficient	0.015
Section Material	Concrete	Spill	1.80 F
Section Size	18 inch	Flow	1.80 F
Number Sections	1		
Culvert Control Properties			
Culvert Control HW Elev	699.21 F	Upstream Velocity Head	0.20 F
RA	0.00	Entrance Loss	0.10 F
H&M Control Properties			
H&M Control HW Elev	699.21 F	Flow Control	Unobstructed
H&M Type	Square edge w/haunched	Area FUL	1.8 F
K	0.0000	HD 5 Chart	1
M	0.0000	HD 5 Scale	1
C	0.0000	Equation Form	1
Y	0.0100		

Project Engineer: son@hanna-surveying.com
Culvert Designer v18.3 (10/08/2020)
HSE2024 18.30 10/27/24 Day Systems, Incorporated Hanna Surveying And Engineering, LLC Waterbury, CT 06708 USA +1-203-755-1686 Page 2 of 2

Culvert Designer/Analyzer Report CULVERT-1 CALCS.

Component: Weir			
Hydraulic Component: Roadway			
Discharge	0.00 cfs	Alternate HW Elevation	699.21 F
Roadway WSP	699.24 F	Overlapping Coefficient	0.90 US
Low Point	699.24 F	Headwater Elevation	NA, N
Discharge Coefficient (C1)	0.90	Submergence Factor (SF)	1.00
Tabular Elevation	-0.0000 F		
Sta (F)	Elev (F)		
0.00	699.04		
20.00	699.07		

Project Engineer: son@hanna-surveying.com
Culvert Designer v18.3 (10/08/2020)
HSE2024 18.30 10/27/24 Day Systems, Incorporated Hanna Surveying And Engineering, LLC Waterbury, CT 06708 USA +1-203-755-1686 Page 3 of 3

Culvert Designer/Analyzer Report CULVERT-2 CALCS.

Analysis Component			
Storm Event	Design	Discharge	32.76 cfs
Peak Discharge Method: User/Specified			
Design Discharge	32.76 cfs	Check Discharge	32.76 cfs
Tabular Conditions: Constant Velocity			
Tabular Elevation	NA, N		
Name	Description	Discharge	HW Elev
CULVERT-2	14 x 24 inch	32.76 cfs	697.86 F
WSP	Roadway	3.00 cfs	697.86 F
Total		32.76 cfs	697.86 F

Project Engineer: son@hanna-surveying.com
Culvert Designer v18.3 (10/08/2020)
HSE2024 18.30 10/27/24 Day Systems, Incorporated Hanna Surveying And Engineering, LLC Waterbury, CT 06708 USA +1-203-755-1686 Page 1 of 2

Culvert Designer/Analyzer Report CULVERT-2 CALCS.

Component: Culvert-2			
Culvert Summary			
Concrete Headwater Elev	697.86 F	Discharge	32.76 cfs
H&M Control HW Elev	697.86 F	Tabular Elevation	NA, N
Culvert Control HW Elev	697.86 F	Control Type	Entrance Control
Headwater Depth/Length	0.00		
Oracles			
Upstream Invert	695.02 F	Downstream Invert	695.07 F
Length	30.00 F	Computed Slope	1.00000 %/H
Hydraulic Profile			
Profile	52	Depth, Downstream	1.21 F
Slope Type	Sharp	Normal Depth	1.21 F
Flow Regime	Supercritical	Critical Depth	1.25 F
Velocity Downstream	6.70 F/s	Critical Slope	1.00000 %/H
Section			
Section Slope	Box	Manning Coefficient	0.015
Section Material	Concrete	Spill	4.50 F
Section Size	4 x 24	Flow	3.00 F
Number Sections	1		
Culvert Control Properties			
Culvert Control HW Elev	697.86 F	Upstream Velocity Head	0.56 F
RA	0.20	Entrance Loss	0.10 F
H&M Control Properties			
H&M Control HW Elev	697.86 F	Flow Control	Unobstructed
H&M Type	80" haunched w 45° bevels	Area FUL	52.0 F
K	0.0000	HD 5 Chart	50
M	0.0000	HD 5 Scale	2
C	0.0100	Equation Form	2
Y	0.0000		

Project Engineer: son@hanna-surveying.com
Culvert Designer v18.3 (10/08/2020)
HSE2024 18.30 10/27/24 Day Systems, Incorporated Hanna Surveying And Engineering, LLC Waterbury, CT 06708 USA +1-203-755-1686 Page 2 of 2

Culvert Designer/Analyzer Report CULVERT-2 CALCS.

Component: Weir			
Hydraulic Component: Roadway			
Discharge	0.00 cfs	Alternate HW Elevation	697.86 F
Roadway WSP	697.86 F	Overlapping Coefficient	0.90 US
Low Point	697.86 F	Headwater Elevation	NA, N
Discharge Coefficient (C1)	0.90	Submergence Factor (SF)	1.00
Tabular Elevation	-0.0000 F		
Sta (F)	Elev (F)		
0.00	698.00		
20.00	698.00		

Project Engineer: son@hanna-surveying.com
Culvert Designer v18.3 (10/08/2020)
HSE2024 18.30 10/27/24 Day Systems, Incorporated Hanna Surveying And Engineering, LLC Waterbury, CT 06708 USA +1-203-755-1686 Page 3 of 3

REVISIONS

#	REVISION	DATE

DESIGNED BY: son@hanna-surveying.com
CHECKED BY: son@hanna-surveying.com
DATE: 10/27/24
PROJECT: 22-364

CULVERT
CALCULATIONS

COUNTRY MEADOWS
CONDOMINIUMS
6065 CR 203
CITY OF CHANDLER
JOHNSON COUNTY, TEXAS

HANNA
SURVEYING
& ENGINEERING LLC.
ENGINEERING FIRM NUMBER 1-22119
1380 US 287 PROVIDENCE RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474



6-9-2025

ISSUE DATE: JUNE 9, 2025

PROJECT NO: 22-364

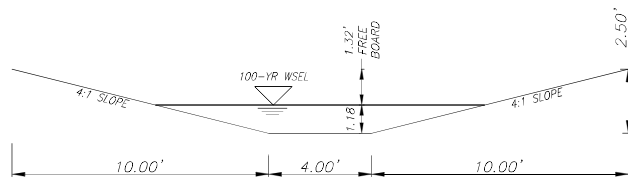
SHEET NUMBER

C-3.9

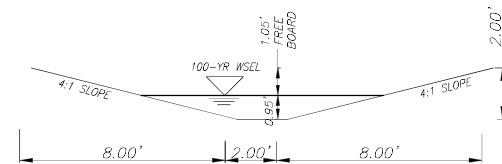
14 of 28

PROPOSED GRASS LINED OPEN CHANNELS

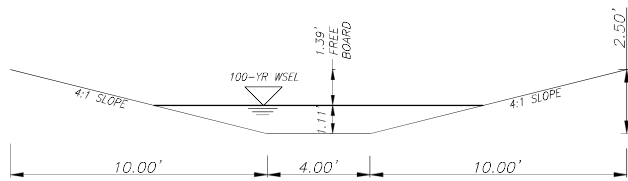
CHANNEL A-1 (N.T.S.)



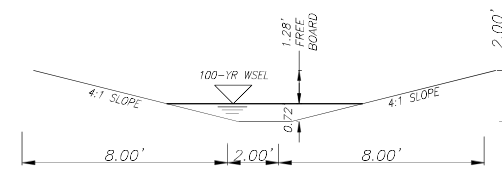
CHANNEL A-3 (N.T.S.)



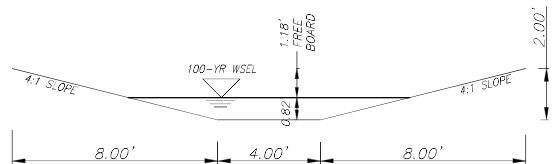
CHANNEL A-1.1 (N.T.S.)



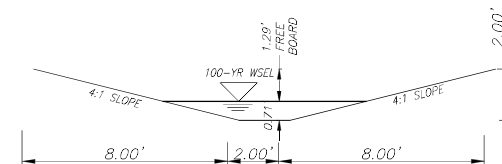
CHANNEL A-4 (N.T.S.)



CHANNEL A-2 (N.T.S.)



CHANNEL A-5 (N.T.S.)



REVISIONS	
#	REVISION

CHANNEL XS

COUNTRY MEADOWS
CONDOMINIUMS
6065 CP 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HSE HANNA
SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER F-22119
SURVEYING FIRM NUMBER 10194633
1300 US 287 PROVIDER RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474



ISSUE DATE
JUNE 9, 2025
PROJECT NO.
22-364
SHEET NUMBER

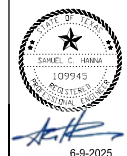
C-4.1

16 of 28

DEVELOPER/OWNER
COUNTRY MEADOWS GRANDVIEW, LLC
2315 MCKENNA COURT
ARLINGTON, TX 76018
JULIE@GRANDVIEWCONSTRUCTION.COM
(817) 713-7874

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
ROBINSON COUNTY, TEXAS

HSE HANNA SURVEYING & ENGINEERING LLC.
 HANNA SURVEYING AND ENGINEERING, LLC.
 380 US 287 FRONTAGE RD SUITE 101
 MANASSAS, TX 75663
 (800) 553-9474
 ENGINEERING FIRM NUMBER F-2219
 SURVEYING FIRM NUMBER 10194621
 SA@HANNA-SE.COM



ISSUE DATE:	JUNE 9, 2025
PROJECT NO.:	22-364
SHEET NUMBER	C-4.2
	17 OF 28

Chemicals Sales, Inc. 80022228	Bentley Systems, Inc. - Heated Pedestal Toilet Center 27 Newsum Company Drive Suite 202 W Waterbury, CT 06705 USA +1 203 725-1188	Flow 1000 Page
-----------------------------------	--	----------------------

Channels Sales, Inc. 8000222	Bentley Systems, Inc. Heated Pulpwood Wash Center 27 Bowen Company Drive Suite 200 N Watstown, CT 06095 USA +1 203 725-1101	Print 1/10/03 Page
---------------------------------	--	--------------------------

Channels Sales, Inc.
800-662-0288

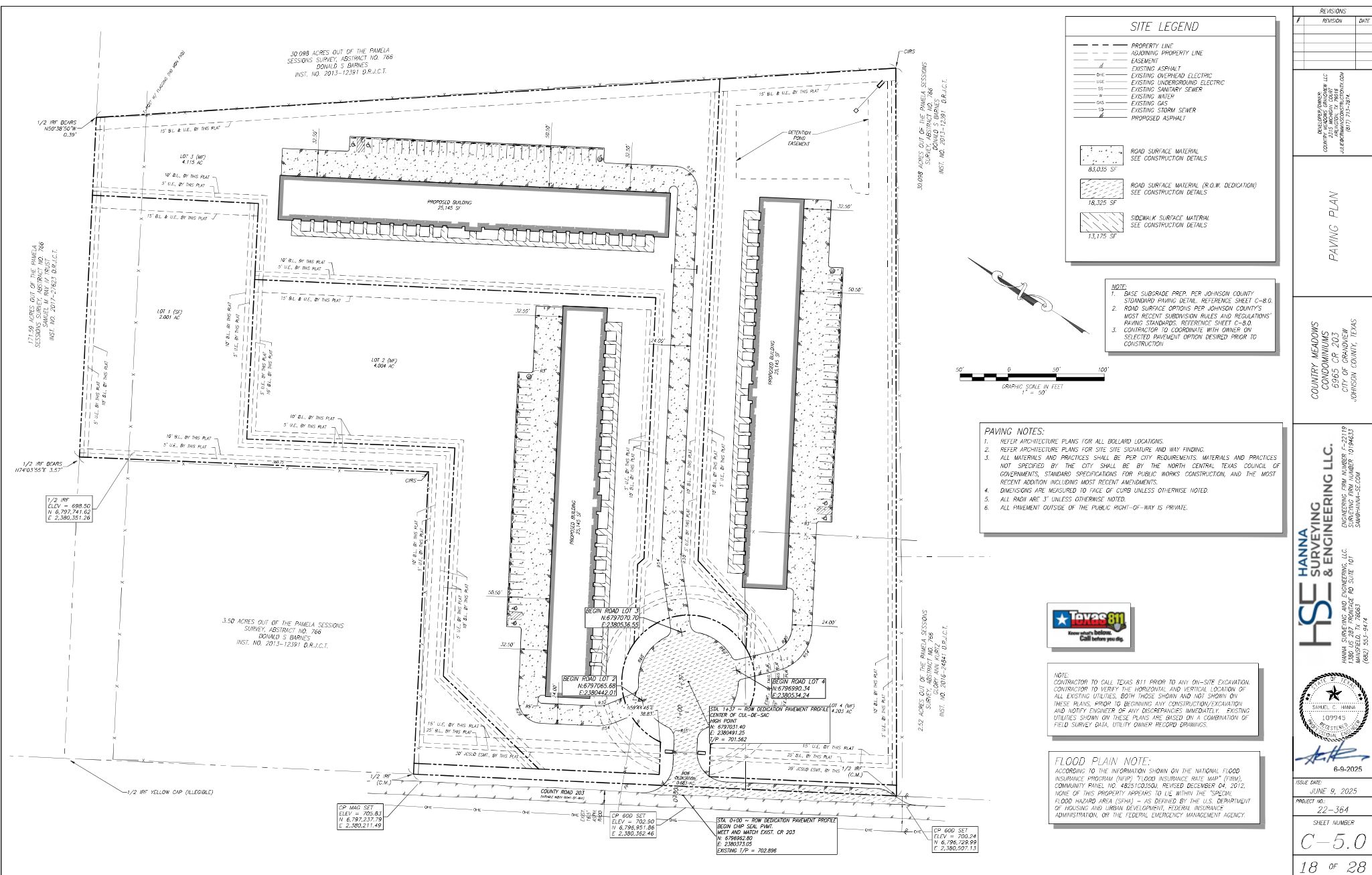
Bentley Systems, Inc. Heated Hydraulic Station
Center
27 Ramon Company Drive Suite 202 SE
Walden, UT 84094 USA +1 203 725-1240

Flow
[10/01]
Page

Charles Calio, Sr. 800-2654	Verity Systems, Inc., Resident Address Counsel Office 20 Ramon Company Drive Suite 200 W Woodward, CT 06798-1400, x1000 708-5544	Page 1100 Page
--------------------------------	---	----------------------

Charlene Calkins, MEd 603-225-6164	Shelley Systems, Inc., Portland, Oregon 97201 Office 27 Western Company Drive Suite 208 M Woodlawn, CT 06057 (401) 239-1144	Page 10/02 Page
---------------------------------------	--	-----------------------

Ch Evans, Calcs, 512
8022004



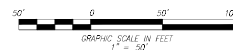
SITE LEGEND

---	PROPERTY LINE
---	ADJOINING PROPERTY LINE
---	EASEMENT
---	EXISTING ASPHALT
---	EXISTING OVERHEAD ELECTRIC
---	EXISTING UNDERGROUND ELECTRIC
---	EXISTING SANITARY SEWER
---	EXISTING WATER
---	EXISTING GAS
---	EXISTING STORM SEWER
---	PROPOSED ASPHALT

	ROAD SURFACE MATERIAL
SEE CONSTRUCTION DETAILS	
	ROAD SURFACE MATERIAL (R.O.W. DEDICATION)
SEE CONSTRUCTION DETAILS	
	SIDWALK SURFACE MATERIAL
SEE CONSTRUCTION DETAILS	

NOTE:

1. BASE SUBGRADE PREP. PER JOHNSON COUNTY STANDARD PAVING DETAIL, REFERENCE SHEET C-8.0.
2. ROAD SURFACE OPTIONS PER JOHNSON COUNTY'S MOST RECENT SUBDIVISION RULES AND REGULATIONS' PAVING STANDARDS, REFERENCE SHEET C-8.0.
3. CONTRACTOR TO COORDINATE WITH OWNER ON SELECTED PAVEMENT OPTION DESIRED PRIOR TO CONSTRUCTION.



- ### PAVING NOTES:

 1. REFER ARCHITECTURE PLANS FOR ALL DOLLAR LOCATIONS.
 2. REFER ARCHITECTURE PLANS FOR SITE SIGNATURE AND WAY FINDING.
 3. ALL MATERIALS AND PRACTICES SHALL BE PER CITY REQUIREMENTS, MATERIALS AND PRACTICES NOT SPECIFIED BY THE CITY SHALL BE BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, AND THE MOST RECENT ADDITION INCLUDING MOST RECENT AMENDMENTS.
 4. DIMENSIONS ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
 5. ALL RADII ARE 3' UNLESS OTHERWISE NOTED.
 6. ALL PAVEMENT OUTSIDE OF THE PUBLIC RIGHT-OF-WAY IS PRIVATE.



NOTE:

CONTRACTOR TO CALL TEXAS 811 PRIOR TO ANY ON-SITE EXCAVATION. CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES, BOTH THOSE SHOWN AND NOT SHOWN ON THESE PLANS PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION AND NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF FIELD SURVEY DATA, UTILITY OWNER RECORD DRAWINGS.

FLOOD PLAIN NOTE:

ACCORDING TO THE INFORMATION SHOWN ON THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) 75,000 INSURANCE RATE MAP* (FIRM), COMMUNITY PANEL NO. 48251C0350A, REVISED DECEMBER 04, 2012, NONE OF THIS PROPERTY APPEARS TO BE WITHIN THE SPECIAL FLOOD HAZARD AREA (SFHA) - AS DERIVED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, FEDERAL INSURANCE ADMINISTRATION, OR THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

REVISIONS	
#	REVISION

DEVELOPER/OWNER
COUNTY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

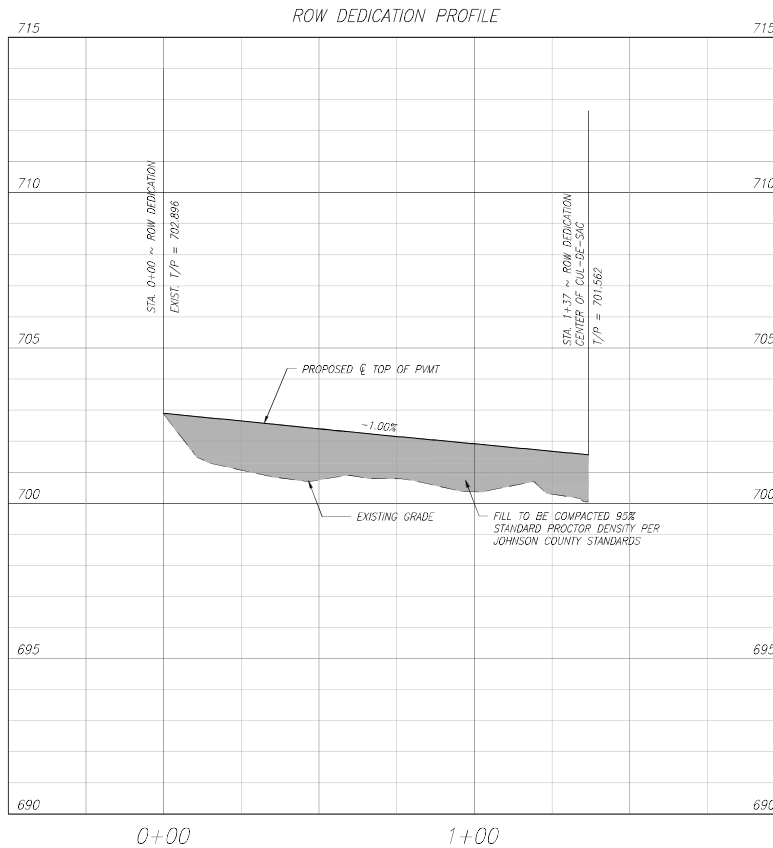
PAVING PLAN

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HANNA HSE & ENGINEERING LLC.
HANNA SURVEYING AND ENGINEERING, LLC
1380 U.S. 287, PROVIDENCE RD. SUITE 101
SARASOTA, FL 34237
(888) 553-8474

6.9.2025

ISSUE DATE:	JUNE 9, 2025
PROJECT NO:	22-364
SHEET NUMBER	C-5.0
18 of 28	



SCALE:
H: 1" = 20'
V: 1" = 2'

REVISIONS		
#	REVISION	DATE

DEVELOPMENT
COUNTY MEADOWS
2115 MCNEIL COURT
JOHNSON COUNTY, TEXAS
(817) 711-2876

PAVING PROFILES

COUNTRY MEADOWS
CONDOMINIUMS
6905 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HSE HANNA
SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER F-22119
SURVEYING FIRM NUMBER 1019453
1300 US 287 PROVIDER RD SUITE 101
DALLAS, TEXAS 75243
(980) 553-8474



6-9-2025

ISSUE DATE:

JUNE 9, 2025

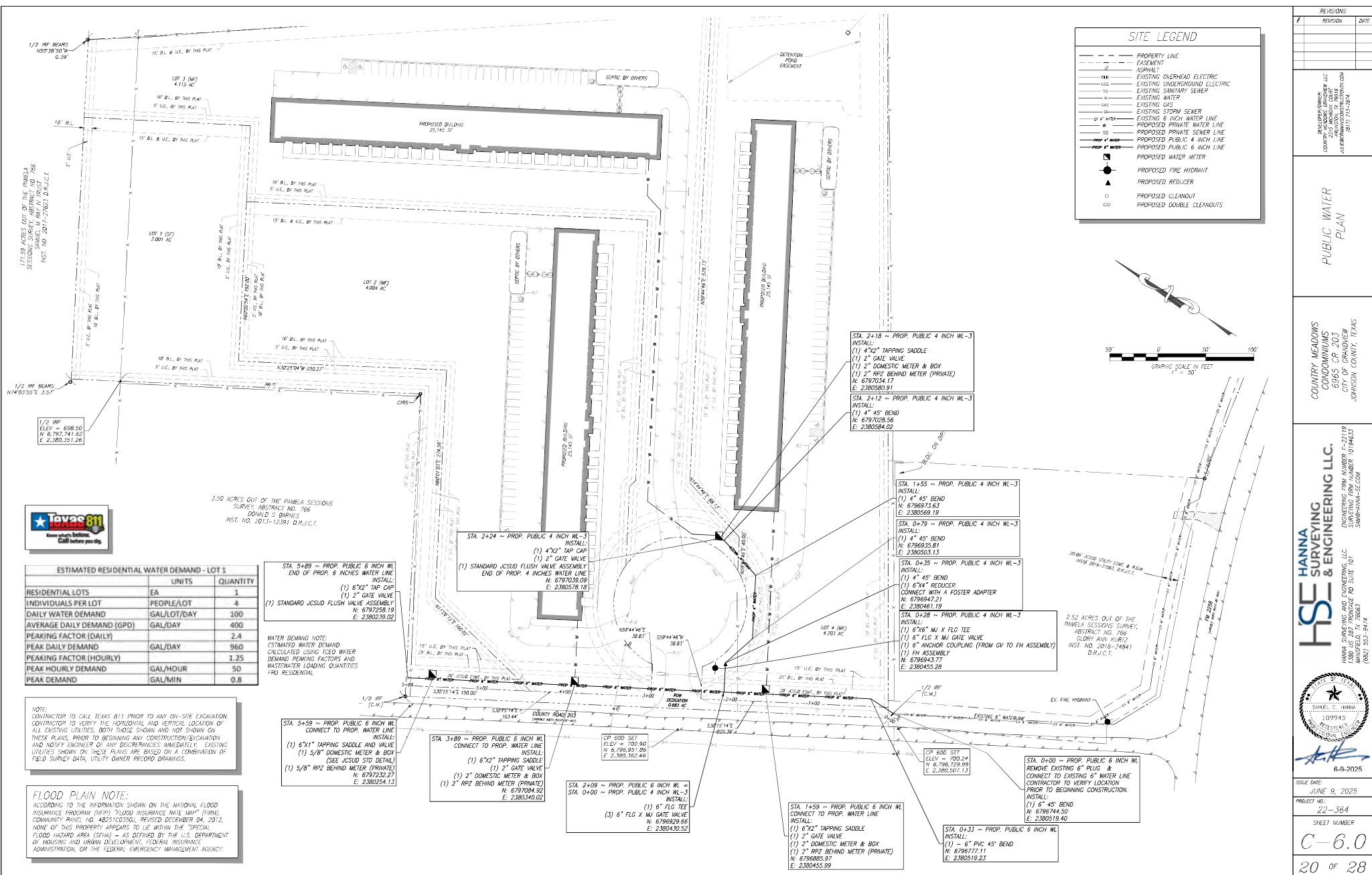
PROJECT NO.

22-364

SHEET NUMBER

C-5.1

19 of 28



SITE LEGEND

- PROPERTY LINE
- EASEMENT
- ASPHALT
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING SANITARY SEWER
- EXISTING WATER
- EXISTING GAS
- EXISTING STORM SEWER
- EXISTING 6 INCH WATER LINE
- PROPOSED PRIVATE WATER LINE
- PROPOSED PUBLIC 4 INCH LINE
- PROPOSED PUBLIC 6 INCH LINE
- PROPOSED WATER METER
- PROPOSED FIRE HYDRANT
- PROPOSED REDUCER
- PROPOSED CLEANOUT
- PROPOSED DOUBLE CLEANOUTS

ESTIMATED RESIDENTIAL WATER DEMAND - LOT 1

	UNITS	QUANTITY
RESIDENTIAL LOTS	EA	1
INDIVIDUALS PER LOT	PEOPLE/LOT	4
DAILY WATER DEMAND	GAL/LOT/DAY	100
AVERAGE DAILY DEMAND (GPD)	GAL/DAY	400
PEAKING FACTOR (DAILY)		2.4
PEAK DAILY DEMAND	GAL/DAY	960
PEAKING FACTOR (HOURLY)		1.25
PEAK HOURLY DEMAND	GAL/HOUR	50
PEAK DEMAND	GAL/MIN	0.8

NOTE:
CONTRACTOR TO CALL TEXAS 811 PRIOR TO ANY ON-SITE EXCAVATION. CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES, BOTH THOSE SHOWN AND NOT SHOWN ON THESE PLANS, PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION AND NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF FIELD SURVEY DATA, UTILITY OWNER RECORD DRAWINGS.

FLOOD PLAIN NOTE:
ACCORDING TO THE INFORMATION SHOWN ON THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANEL NO. 48251C0350, REVISED DECEMBER 04, 2012, NONE OF THIS PROPERTY APPEARS TO LIE WITHIN THE "SPECIAL FLOOD HAZARD AREA (SFHA)" - AS DEFINED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, FLOOD INSURANCE ADMINISTRATION, OR THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

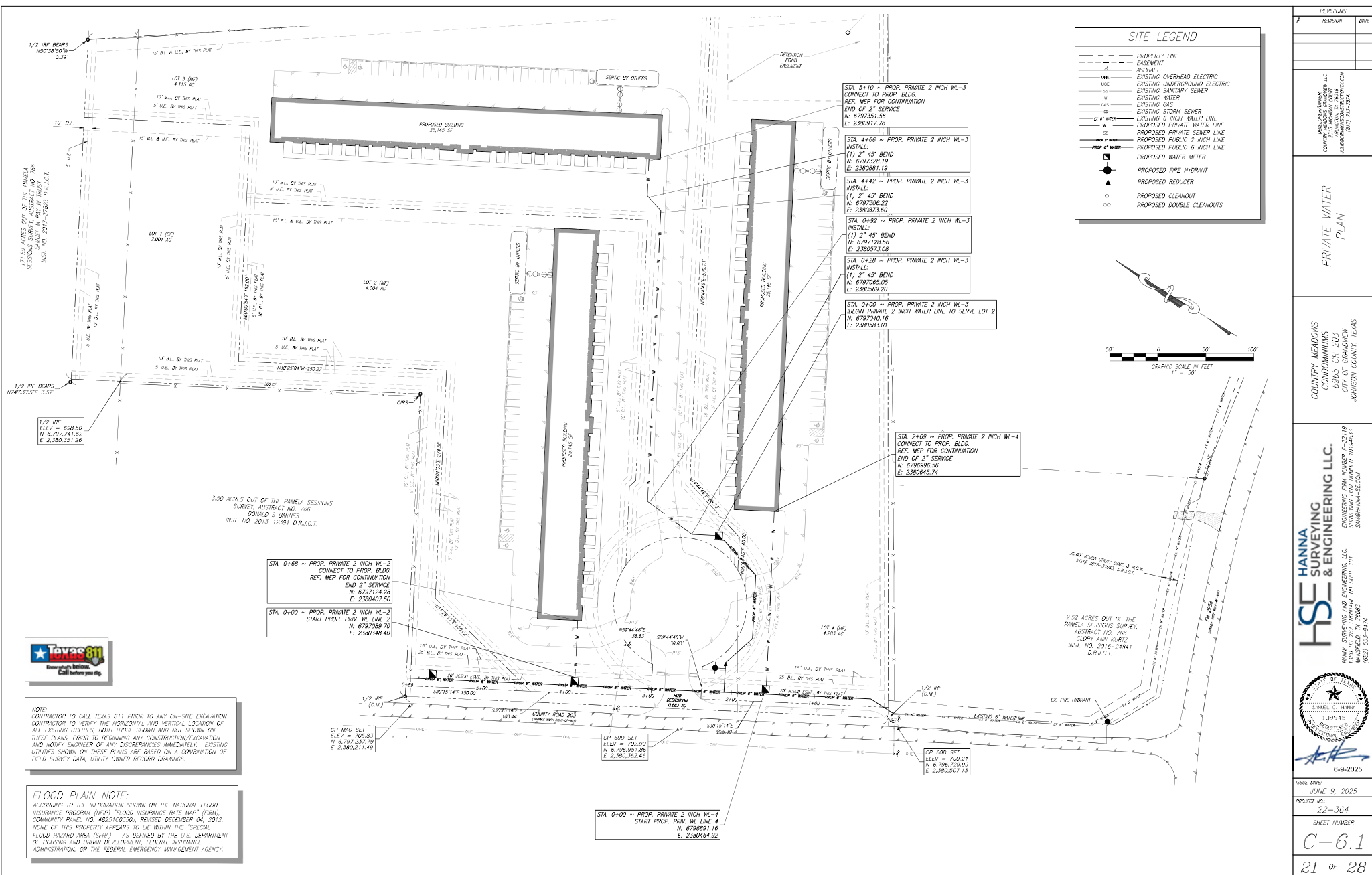
REVISIONS

#	REVISION	DATE

COUNTRY MEADOWS CONDOMINIUMS 6965 CR 203 CITY OF GRANOWEN JOHNSON COUNTY, TEXAS

HANNA HSE SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER 1-22119
SURVEYING FIRM NUMBER 10194633
SAMPLING-SEC-001
(860) 553-8474

ISSUE DATE: JUNE 9, 2025
PROJECT NO: 22-364
SHEET NUMBER: C-6.0
20 of 28



SITE LEGEND

- PROPERTY LINE
- EASEMENT
- ASPHALT
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING SANITARY SEWER
- EXISTING WATER
- EXISTING GAS
- EXISTING STORM SEWER
- EXISTING 6 INCH WATER LINE
- PROPOSED PRIVATE WATER LINE
- PROPOSED PRIVATE SEWER LINE
- PROPOSED PUBLIC 2 INCH LINE
- PROPOSED PUBLIC 6 INCH LINE
- PROPOSED WATER METER
- PROPOSED FIRE HYDRANT
- PROPOSED REDUCER
- PROPOSED CLEANOUT
- PROPOSED DOUBLE CLEANOUTS

REVISIONS	
#	REVISION

DEVELOPER/OWNER
COUNTY MEADOWS CONDOMINIUMS
2315 MCNEEL COURT
JACKSONVILLE, FL 32218
(904) 731-2874

PRIVATE WATER PLAN

COUNTRY MEADOWS CONDOMINIUMS
6905 CR 203
CITY OF GRANBOW
JOHNSON COUNTY, TEXAS

HSE HANNA SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER 1-22119
1300 US 289, PRIVATE RD SUITE 101
SARASOTA, FL 34237
(888) 553-8474

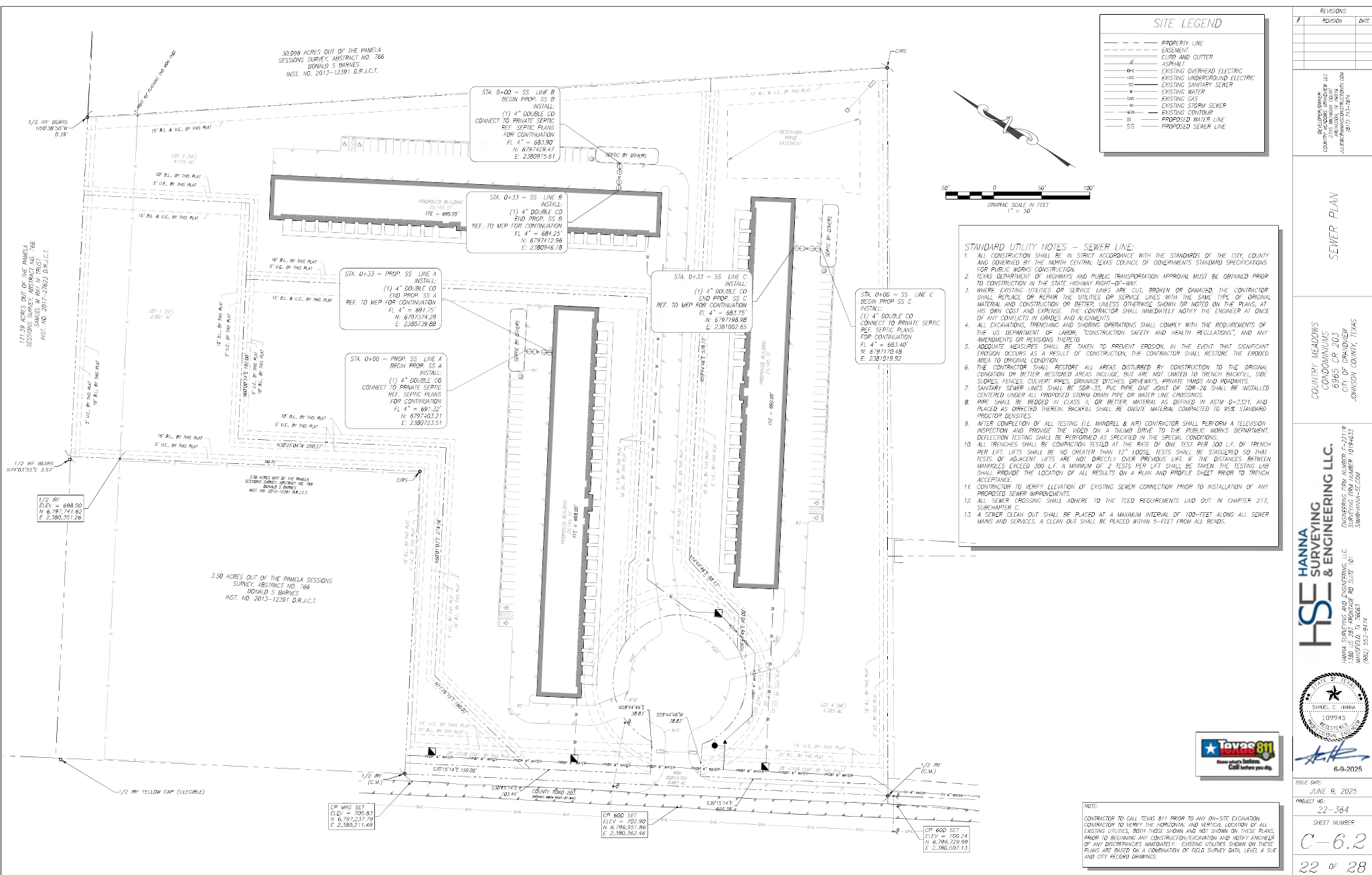
6.9.2025

ISSUE DATE: JUNE 9, 2025
PROJECT NO: 22-364
SHEET NUMBER: C-6.1
21 of 28



NOTE:
CONTRACTOR TO CALL TEXAS 811 PRIOR TO ANY ON-SITE EXCAVATION.
CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF
ALL EXISTING UTILITIES, BOTH THOSE SHOWN AND NOT SHOWN ON
THESE PLANS, PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION
AND NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. EXISTING
UTILITIES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF
FIELD SURVEY DATA, UTILITY OWNER RECORD DRAWINGS.

FLOOD PLAIN NOTE:
ACCORDING TO THE INFORMATION SHOWN ON THE NATIONAL FLOOD
INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM),
COMMUNITY PANEL NO. 48251C0350, REVISED DECEMBER 04, 2012,
NONE OF THIS PROPERTY APPEARS TO LIE WITHIN THE "SPECIAL
FLOOD HAZARD AREA (SFHA)" - AS DEFINED BY THE U.S. DEPARTMENT
OF HOUSING AND URBAN DEVELOPMENT, FLOOD INSURANCE
ADMINISTRATION, OR THE FEDERAL EMERGENCY MANAGEMENT AGENCY.



SITE LEGEND		
---	PROPERTY LINE	
---	EASEMENT	
---	GUM AND CUTTER	
---	ASPHALT	
---	EXISTING OVERHEAD ELECTRIC	
---	EXISTING UNDERGROUND ELECTRIC	
---	EXISTING SANITARY SEWER	
---	EXISTING WATER	
---	EXISTING GAS	
---	EXISTING STORM SEWER	
---	EXISTING CONTOUR	
---	PROPOSED WATER LINE	
---	PROPOSED SEWER LINE	

- STANDARD UTILITY NOTES - SEWER LINE:**
- ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE STANDARDS OF THE CITY, COUNTY AND GOVERNED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 - TEXAS DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION APPROVAL MUST BE OBTAINED PRIOR TO CONSTRUCTION IN THE STATE HIGHWAY RIGHT-OF-WAY.
 - WHERE EXISTING UTILITIES OR SERVICE LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE THE UTILITIES OR SERVICE LINES WITH THE SAME TYPE OF ORIGINAL MATERIAL AND CONSTRUCTION OR BETTER, UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS, AT HIS OWN COST AND EXPENSE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICTS IN GRADES AND ALIGNMENTS.
 - ALL EXCAVATIONS, TRENCHING AND SHORING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE US DEPARTMENT OF LABOR, "CONSTRUCTION SAFETY AND HEALTH REGULATIONS", AND ANY AMENDMENTS OR REVISIONS THERE TO.
 - ADEQUATE MEASURES SHALL BE TAKEN TO PREVENT EROSION, IN THE EVENT THAT SIGNIFICANT EROSION OCCURS AS A RESULT OF CONSTRUCTION, THE CONTRACTOR SHALL RESTORE THE ERODED AREA TO ORIGINAL CONDITION.
 - THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO THE ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED TO TRENCH BACKFILL, SIDE SLOPES, FENCES, CULVERT PIPES, DRAINAGE DITCHES, DRIVEWAYS, PRIVATE YARDS AND ROADWAYS.
 - SANITARY SEWER LINES SHALL BE SDR-35, PVC PIPE, ONE JOINT OF SDR-26 SHALL BE INSTALLED CENTERED UNDER ALL PROPOSED STORM DRAIN PIPE OR WATER LINE CROSSINGS.
 - PIPE SHALL BE BEDDED IN CLASS II, OR BETTER, MATERIAL AS DEFINED IN ASTM D-2321, AND PLACED AS DIRECTED THEREIN. BACKFILL SHALL BE ON-SITE MATERIAL COMPACTED TO 95% STANDARD PROCTOR DENSITIES.
 - AFTER COMPLETION OF ALL TESTING (I.E. MANHOLE & AIR) CONTRACTOR SHALL PERFORM A TELEVISION INSPECTION AND PROVIDE THE VIDEO ON A THUMB DRIVE TO THE PUBLIC WORKS DEPARTMENT. DEFLECTION TESTING SHALL BE PERFORMED AS SPECIFIED IN THE SPECIAL CONDITIONS.
 - ALL TRENCHES SHALL BE COMPACTION TESTED AT THE RATE OF ONE TEST PER 300 L.F. OF TRENCH PER LIFT. LIFTS SHALL BE NO GREATER THAN 12" LOOSE TESTS SHALL BE STAGGERED SO THAT TESTS OF ADJACENT LIFTS ARE NOT DIRECTLY OVER PREVIOUS LIFT. IF THE DISTANCES BETWEEN MANHOLES EXCEED 300 L.F., A MINIMUM OF 2 TESTS PER LIFT SHALL BE TAKEN. THE TESTING LAB SHALL PROVIDE THE LOCATION OF ALL RESULTS ON A PLAN AND PROFILE SHEET PRIOR TO TRENCH ACCEPTANCE.
 - CONTRACTOR TO VERIFY ELEVATION OF EXISTING SEWER CONNECTION PRIOR TO INSTALLATION OF ANY PROPOSED SEWER IMPROVEMENTS.
 - ALL SEWER ENCLOSURE SHALL ADHERE TO THE TCOO REQUIREMENTS Laid OUT IN CHAPTER 217, SUBCHAPTER C.
 - A SEWER CLEAN OUT SHALL BE PLACED AT A MAXIMUM INTERVAL OF 100'-FEET ALONG ALL SEWER MAINS AND SERVICES. A CLEAN OUT SHALL BE PLACED WITHIN 5'-FEET FROM ALL BENDS.

REVISIONS		
#	REVISION	DATE

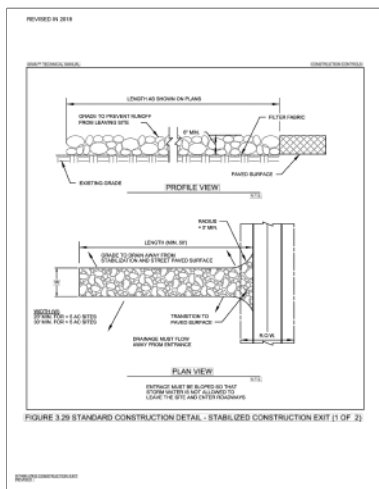
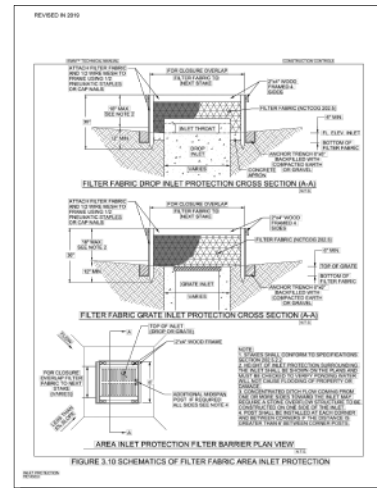
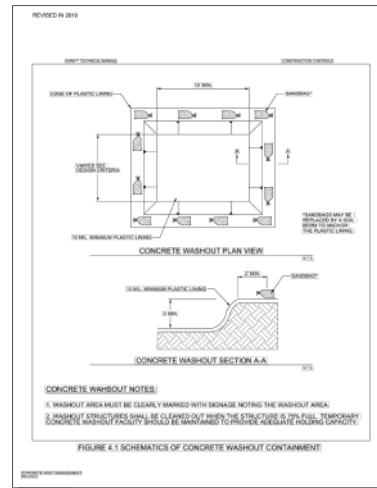
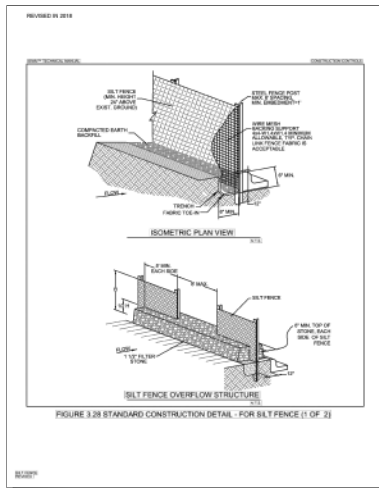
SEWER PLAN

COUNTRY MEADOWS CONDOMINIUMS PHASE 203 CITY OF CHANDLER JOHNSON COUNTY, TEXAS

HANNA HSE SURVEYING & ENGINEERING LLC.
ENGINEERING FIRM NUMBER 10194637
SURVEYING FIRM NUMBER 10194637
6.9.2025



NOTE:
CONTRACTOR TO CALL TEXAS 811 PRIOR TO ANY ON-SITE EXCAVATION.
CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES, BOTH THOSE SHOWN AND NOT SHOWN ON THESE PLANS, PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION AND NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF FIELD SURVEY DATA, LEVEL A SURVEY AND CITY RECORD DRAWINGS.



REVISIONS		
#	REVISION	DATE

DEVELOPER/OWNER:
COUNTRY MEADOWS GRASSVIEW LLC
2315 MICHIGAN COURT
ARLINGTON, TX 76018
J.B.BROWN@CONSTRUCTIONTX.COM
(817) 713-7874

EROSION CONTROL DETAILS

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
DALLAS COUNTY, TEXAS

HSE HANNA
SURVEYING
& ENGINEERING LLC.

HANNA SURVEYING AND ENGINEERING, LLC.
1380 US 297 FRONTAGE RD SUITE 101
MANSFIELD, TX 76063
(862) 553-9474

ENGINEERING FIRM NUMBER F-27119
SURVEYING FIRM NUMBER S-104633
SAM06-HANNA-SE-CDM



ISSUE DATE:

JUNE 9, 2025

PROJECT NO.:

22-364

SHEET NUMBER

year after the date of the entry of the commissioners court's order granting the cancellation.

- (b) The commissioners court may deny a cancellation under this section if the commissioners court determines the cancellation will prevent the proposed interconnection of infrastructure to pending or existing development.

SECTION IX General Road and Street Specifications

A. Street Specifications:

The following improvements are required on new streets created by the subdivision:

- (a) The minimum gradient for a subdivision street shall be four-tenths (0.40) percent and the maximum gradient shall be ten (10) percent for streets with open bar ditches and the maximum gradient on curb and gutter streets shall be determined by the engineer designing the street for the public safety of persons using the street.
- (b) The owner shall remove any trees or obstructions from the right-of-way of the streets of the subdivision or a county road abutting the subdivision that are within the slope of the drainage ditches or within ten (10) feet of the curb of a curb and gutter street. All trees will be removed from drainage easements along the frontal slope.

B. Right of Way:

- (a) The owner shall provide for right-of-way on main artery streets or roads within the subdivision of a width of not less than sixty (60) feet or more than one hundred (100) feet as determined by the Public Works Department and the Commissioners Court.

Where a Farm to Market road, or State Highway abuts the subdivision, the owner shall set back the subdivision property line a minimum of forty (40) feet from the center line of the existing road to provide for future right-of-way development per TxDOT requirements.

- (b) Typical County Roads and streets or roads in the subdivision shall have a right-of-way of not less than sixty (60) feet. The owner shall provide drainage easements or lots to meet the requirements of the Drainage Construction Plans when the drainage ditches exceed the width of the planned right-of-way width.

Subdivision Rules and Regulations of Johnson County

Amended July 8, 2024

44

During the interval of time between application and mixing, hydrated lime that has been exposed to the open air for a period of six (6) hours or more or has had excessive loss due to washing or blowing will not be accepted.

The Public Works Department, upon the basis of engineering reports provided and paid for by the owner, may entertain proposals for other types of time and different percentages of time.

Sandy soil shall be stabilized with concrete as determined by the results of laboratory test and approved engineering standards.

- (3) **Base:**
After the sub-grade is completed it shall be covered with State approved crushed stone compacted to a depth of eight (8) inches so be laid in two (2) equal courses of four (4) inches each. (Physical Requirements for flexible base material, Type "A" Grade 1 meeting the Texas Department of Public Transportation Standard Specifications). Developer or contractor will be required to provide copies of original delivery tickets on base material used.

- (4) **Density:**
The sub-grade and base shall be density controlled in conformity with the regulations of the Texas Department of Highways and Public Transportation.

The base shall be a minimum of 95% Standard Proctor density as required by the Texas Department of Highways and Public Transportation.

The sub-grade shall be a minimum of 95% Standard Proctor density as required by the Texas Department of Highways and Public Transportation.

The Public Works Department shall control the frequency and number of density tests. The minimum number of tests on the sub-grade and base density shall be six (6) tests per one thousand feet of length of roadway.

The sub-grade and base courses shall be subject to density tests at the contractor's or owner's expense.

Random checking of thickness of the road base will be required at the time the final density test is performed.

- (5) **Driving Surface:**
The driving surface may be a surface treatment of:

- Three (3) course surface treatment using 3/8" pea gravel or 3/8" crushed stone;

Subdivision Rules and Regulations of Johnson County

Amended July 8, 2024

46

- (c) Subdivisions bordering Johnson County Road 600 (E. Renfro) from Quill Miller Creek bridges south to State Highway 67 shall provide a minimum right-of-way of seventy (70) feet from the center line of the County Road 600 or more as determined by the Public Works Department and the Commissioners Court, or Texas Department of Transportation.

C. Requirement for Street Pavement:

All streets shown on the plat must meet the following specifications:

(1) Roadway:

The developer will build the roadbed and ditches to meet the requirements shown on Typical Section Sheets (Appendix A). The inside pavement edge of sharp curves shall be widened if deemed necessary by the Public Works Department.

The minimum design speed for local streets shall not be less than 30 miles per hour except where approved by the Commissioners Court in areas such as "Children at Play" in residential areas.

(2) Sub-grade:

Random testing of the sub-grade for plasticity will be required and said tests shall be performed by a licensed lab for plasticity. The sub-grade shall be scarified to a depth of eight (8) inches, watered and compacted.

The sub-grade shall be lime stabilized with hydrated lime in the amount of thirty-five (35) pounds per square yard in slurry placing to a depth of eight (8) to ten (10) inches when the plastic index is twenty (20) or greater, or chemical injection may be applied in a like manner. A representative of the company providing the chemical shall be on sight during the chemical injection process. Additional density tests will be required for chemically injected roadbeds.

The material and lime shall be thoroughly mixed by approved road mixers or other approved equipment, and the mixing continued until, in the opinion of the Public Works Department, a homogeneous friable mixture of material and lime is obtained, such that when all nonclinging aggregates retained on the 3/4 sieve are removed, the remainder of the material shall meet the following requirements when tested from the roadway in the roadway condition by laboratory sieves:

Minimum passing	1-3/4 sieve	100%
Minimum passing	3/4 sieve	85%

The soil lime mixture shall be sprinkled during the mixing operation as directed by the Public Works Department to provide optimum moisture in the mixing.

Subdivision Rules and Regulations of Johnson County

Amended July 8, 2024

45

- Four (4) inches of hot plant mix asphalt. Layering shall be two (2) inches Type "D" topped by two (2) inches of Type "A" or Type "B" (Amended July 8, 2024); or
- 5 inches of Concrete (Amended August 22, 2022)

(6) Time of Driving Surface Application:

Asphalt application will be after April 15 and prior to October 15 of each calendar year.

The time may be extended to November 15 for Hot Mix Overlay (on/s) subject to the approval of the Public Works Director and the Commissioner of the Precinct.

(7) Concrete Street with Curb and Gutter:

A concrete curb and gutter street means a two-lane street with concrete curb and gutter that has a minimum street width of thirty-two (32) feet from back face of curb to back face of curb.

The natural sub-grade will be lime stabilized to eight (8) inches, with 7% lime and compacted density of 95%.

The gutter will be twenty-four (24) inches wide.

The concrete curb shall be a six (6) inch standard curb with a five (5) inch thick driving surface.

A concrete curb and gutter street shall meet all other specifications contained in these Subdivisions Rules and Regulations. The concrete curb and gutter shall be installed in accordance with the requirements shown on the diagrams in the Exhibits.

The concrete curb and gutter shall be installed prior to the driving surface being installed.

All concrete curb and gutter will be backed to undisturbed soil to maintain the integrity of the curbing.

8. Concrete Streets without curbing:

On concrete streets without curb and gutter, the shoulders will be of flexible base material with three (3) foot minimum continuance of pavement depth with a one (1) foot minimum width of slope to sub-grade level.

9. Paved Surface:

All roads inside subdivision will have a minimum paved surface of twenty-two feet (22') with base material extending six (6) feet beyond the edge of paving for a minimum of thirty-four (34) feet of base material. (Amended July 8, 2024).

Subdivision Rules and Regulations of Johnson County

Amended July 8, 2024

47

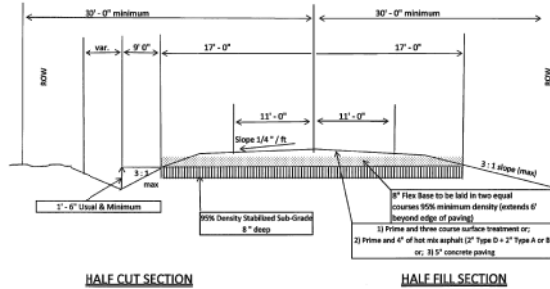


Figure 7
TYPICAL ROADWAY SECTION

ALLOWABLE
PAVING
OPTIONS

REVISIONS

#	REVISION	DATE

DEVELOPER/OWNER
COUNTY MEADOWS
CONDOMINIUMS
JANET HANNA SURVEYING & ENGINEERING, LLC
(817) 731-2874

CONSTRUCTION
DETAILS

COUNTRY MEADOWS
CONDOMINIUMS
6965 CR 203
CITY OF GRANDVIEW
JOHNSON COUNTY, TEXAS

HANNA SURVEYING & ENGINEERING, LLC
ENGINEERING FIRM NUMBER 1-22119
SURVEYING FIRM NUMBER 0194633
SAMPLING-SECTION
(863) 553-8474

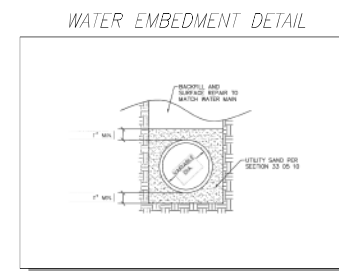
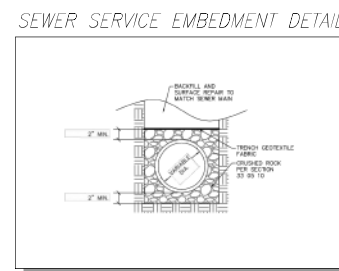
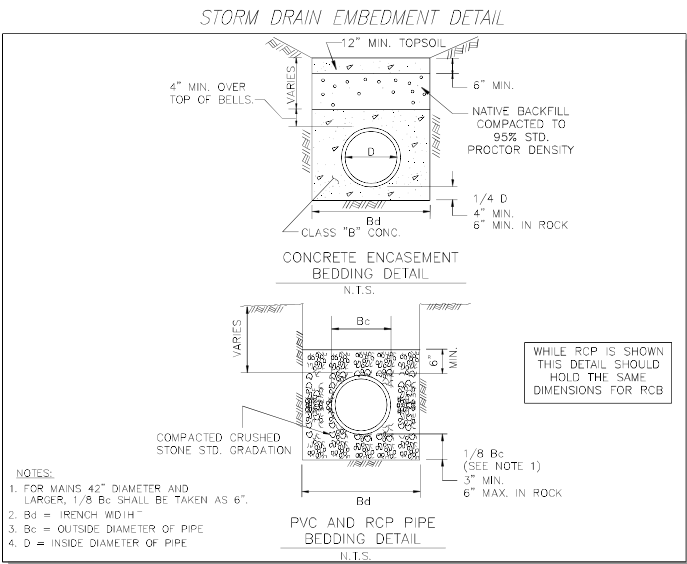
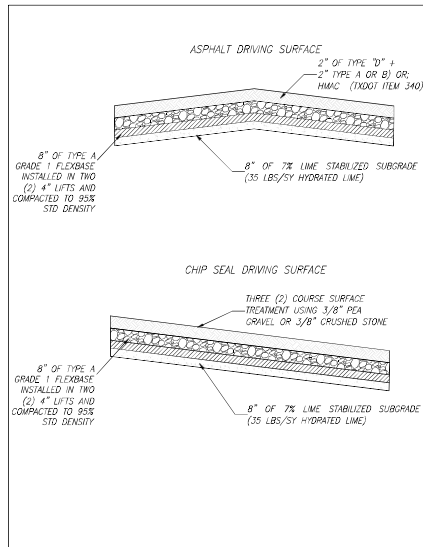


ISSUE DATE
JUNE 9, 2025

PROJECT NO.
22-364

SHEET NUMBER
C-8.0

25 of 28



ISSUE DATE: JUNE 9, 2025
PROJECT NO.: 22-364
SHEET NUMBER C-8.1
26 OF 28

DISCLAIMER: This document is prepared by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the consequences of this standard or for incorrect results or damages resulting from its use.

DATE: FILE:

Dimensions					Variable Reinforcing				Estimated Quantities per ft. of wing (2-wings)		Estimated Quantities per ft. of toe wall (1-toe wall)	
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1		Bars J2		Reinf (CY/Ft)	Conc (CY/Ft)	Reinf (CY/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-0"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

Bar	Size	No.	Spa
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

Bar	Size	No.	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"

WING DIMENSION FORMULAS:

(All values are in feet.)

$$Hw = H + T + C$$

$$Lw = (Hw)(SL) + \cosine(B) \text{ for Type PW-1}$$

$$= (Hw - 1')(SL) + \cosine(B) \text{ for Type PW-2 and } Hw \geq 4'$$

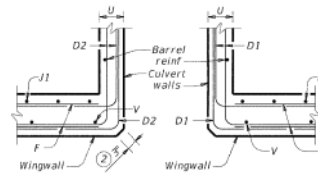
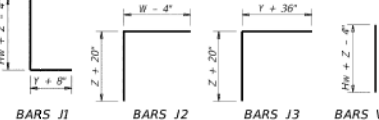
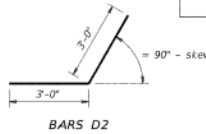
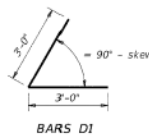
$$= (Hw - 0.5')(SL) + \cosine(B) \text{ for Type PW-2 and } Hw < 4'$$

For cast-in-place culverts:
 $Lw = [(N)(5) + (N + 1)(U)] + \cosine(B)$

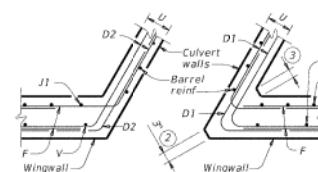
For precast culverts:
 $Lw = [(N)(2U + 5) + (N - 1)(0.5')] + \cosine(B)$
 Total Wingwall Area (two wings - SF)
 $= (2)(Hw)(Lw) \text{ for Type PW-1}$
 $= (2)(Hw)(Lw) - 6 \text{ SF for Type PW-2 and } Hw \geq 4'$
 $= (2)(Hw)(Lw) - 1.5 \text{ SF for Type PW-2 and } Hw < 4'$

Hw = Height of wingwall
 Lw = Length of wingwall
 Lt = Culvert toe wall length
 N = Number of culvert spans
 SL = Channel slope ratio, (horizontal: 1 vertical, usual value is 2:1)
 B = Culvert skew

See applicable box culvert standard sheet for S, H, T, and U values.



SECTION C-C - PW-1



SECTION C-C - PW-2

- Skew = 0°
- At discharge end, chamfer may be 1/4" minimum.
- For 15° skew - 1"
For 30° skew - 2"
For 45° skew - 3"
- Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
- Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
- Extend Bars E2 1'-6" minimum into the wingwall footing.
- Lap Bars M1 1'-6" minimum with Bars M2.
- Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
- 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 and T631LS Railings (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, construct curbs no more than 3" above finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade.
 Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 1'-0" typical, 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
- 3'-0" for Hw < 4'.
- 6" for Hw < 4'.

DESIGNER NOTES:

Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
 Type PW-2 can only be used for applications without a railing mounted to the wingwall.

MATERIAL NOTES:

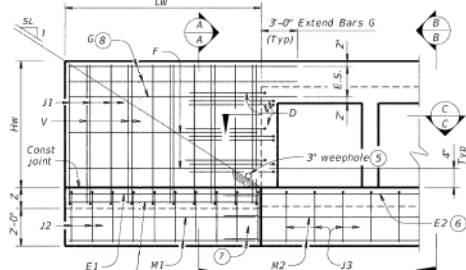
Provide Class C concrete (f'c=3,600 psi).
 Provide Grade 60 reinforcing steel.
 Provide galvanized reinforcing steel if required elsewhere in the plans.

GENERAL NOTES:

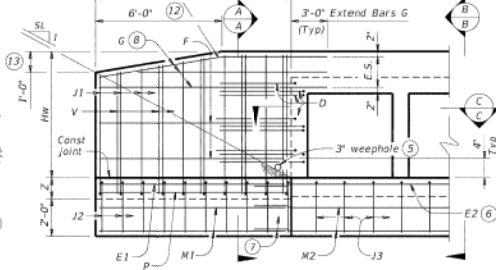
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
 Depth of toe walls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
 See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
 Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

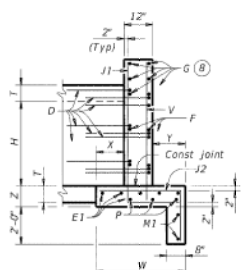
Texas Department of Transportation		Bridge Division Standard	
CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS			
TYPES PW-1 AND PW-2			
PW			
FILE: CD-PW-25.dwg	REV: GAF	EX: CAT	CHK: TxDOT
©TxDOT February 2020	DATE	SECT	AND
REVISIONS	DATE	COUNTY	SHEET NO.



PARTIAL ELEVATION - PW-1

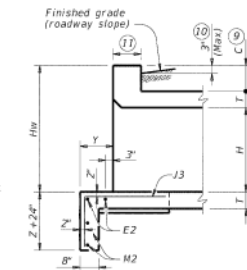


PARTIAL ELEVATION - PW-2



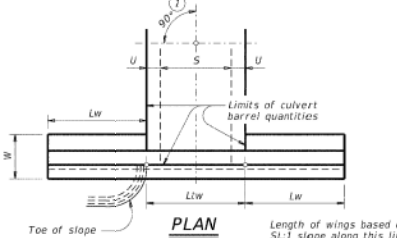
SECTION A-A

(Showing wing reinforcement.)

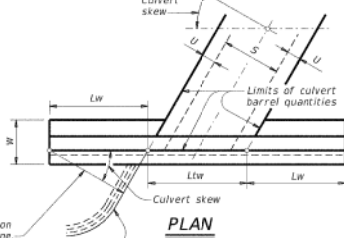


SECTION B-B

(Showing wing reinforcement.)



DETAILS FOR NON-SKEWED BOX CULVERTS



DETAILS FOR SKEWED BOX CULVERTS

(Showing 30° skew.)

REVISIONS	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

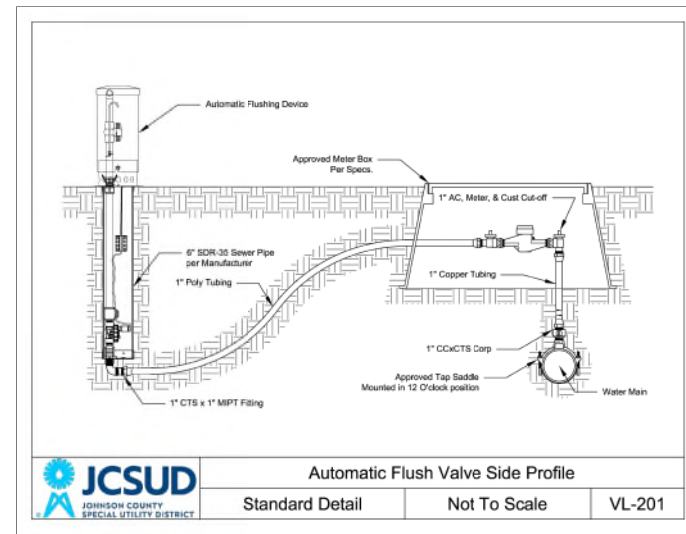
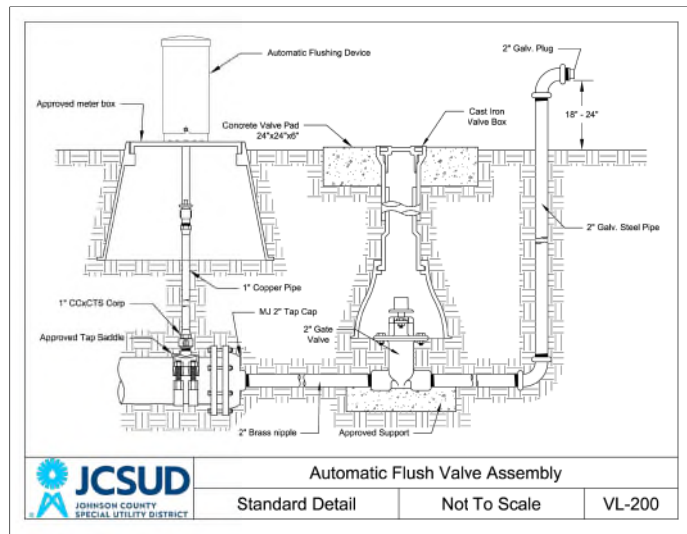
CONSTRUCTION DETAILS 3

COUNTRY MEADOWS CONDOMINIUMS 6965 CR 203 CITY OF GRANDVIEW JOHNSON COUNTY, TEXAS

HANNA SURVEYING & ENGINEERING LLC. ENGINEERING FIRM NUMBER C-23119 SURVEYING FIRM NUMBER 0194633 SAMPLING-SEC-001 (863) 553-8474



ISSUE DATE: JUNE 9, 2025
 PROJECT NO: 22-364
 SHEET NUMBER: C-8.2



REVISIONS	
#	DATE

DEVELOPED BY: JCSUD
 COUNTY: JOHNSON COUNTY
 PROJECT: 22-364
 DATE: 6/9/2025
 (817) 751-2874

CONSTRUCTION
 DETAILS 4

COUNTRY MEADOWS
 CONDOMINIUMS
 6065 CP 203
 CITY OF GRANDVIEW
 JOHNSON COUNTY, TEXAS

HSE HANNA SURVEYING & ENGINEERING LLC.
 ENGINEERING FIRM NUMBER 1-22119
 SURVEYING FIRM NUMBER 10194633
 1300 US 287 PROVIDER RD SUITE 101
 FORT WORTH, TEXAS 76103
 (817) 553-8474



ISSUE DATE	JUNE 9, 2025
PROJECT NO.	22-364
SHEET NUMBER	C-8.3
	28 OF 28

AGENDA PLACEMENT FORM

(Submission Deadline – Monday, 5:00 PM before Regular Court Meetings)

Date: June 27, 2025

Meeting Date: July 14, 2025

Submitted By: Julie Edmiston

Department: Public Works

Signature of Elected Official/Department Head:

Court Decision: This section to be completed by County Judge's Office


Description:

Consideration of Order 2025-63, Order Approving the Final Plat of Country Meadows Addition, Lots 1-4, Block 1, located in Precinct 4.

Water Source is JCSUD

(May attach additional sheets if necessary)

Person to Present: Jennifer VanderLaan

(Presenter must be present for the item unless the item is on the Consent Agenda)

Supporting Documentation: (check one) ☒ PUBLIC ☐ CONFIDENTIAL

(PUBLIC documentation may be made available to the public prior to the Meeting)

Estimated Length of Presentation: 10 minutes

Session Requested: (check one)

☒ Action Item ☐ Consent ☐ Workshop ☐ Executive ☐ Other _____

Check All Departments That Have Been Notified:

☐ County Attorney ☐ IT ☐ Purchasing ☐ Auditor

☐ Personnel ☒ Public Works ☐ Facilities Management

Other Department/Official (list) _____

**Please List All External Persons Who Need a Copy of Signed Documents
In Your Submission Email**

Approved in CC on 9/11/2023